ELECTRICAL WORLD

News Issue

A McGRAW-HILL PUBLICATION

C. M. Laffoon, 1949 Lamme Medalist

MR. POWER COMPANY—CIVIC LEADER

MR. POWER COMPANY, TRAFFIC VITALLY CONCERNS YOUR COMMUNITY — SO IT CONCERNS YOU!
YOU'RE TELLING ME! I LOST A FENDER THIS MORNING
STREETS WERE MADE TO MOVE PEOPLE, NOT VEHICLES
ABSOLUTELY RIGHT! BUT PEOPLE STILL DRIVE THEIR OWN CARS
MOTORISTS BECOME RIDERS WHEN GIVEN EFFICIENT TRANSIT — AND THEY BECOME YOUR CUSTOMERS
CUSTOMERS? OF MINE?
CERTAINLY! WHEN YOU ENCOURAGE ELECTRIC TRANSIT YOU'RE SELLING YOUR OWN SERVICE
AND I'M CONTRIBUTING TO THE WELFARE OF MY COMMUNITY AS WELL AS MY OWN BUSINESS

Right, Mr. Power Company. We have a mutual interest in electric transit as electrical men, and as citizens.

APPARATUS DEPT., GENERAL ELECTRIC CO., Schenectady, N.Y.

GENERAL ELECTRIC

The Electrical Week

British Electricity Authority is building a 275-kv super-grid to reinforce its present 132-kv network. Part of the nationalized system's 10-year, overall expansion program, the super-grid may be operated at 380/400 kv. A test section has been energized since last November (p 4) . . . Electric utilities raised nearly $33 million in new money through sales of securities in a recent two-week period. And more than $30 million more was raised in the week ending May 15, according to the weekly report of security offerings, a new addition to ELECTRICAL WORLD's financial coverage (p 14) . . . Edison Electric Institute has drawn up a policy statement reporting its attitude toward federal hydro development. The government could, and should, seek industry cooperation, it asserts (p 5) . . . C. M. Laffoon, well-known Westinghouse engineer, has been awarded the 1949 Lamme Medal (p 5) . . . More executive assistance will be needed to improve safety on the job, EEI's Accident Prevention Committee concluded at a session in Chicago (p 6) . . . And power companies must get out and sell, it was agreed at Pennsylvania Electric Association's industrial conference (p 12) . . . Construction will cost utilities more in 1950 (p 30).

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Annual usage by its residential customers of 5,035 kwhr has been reported by the Electric Power Board of Chattanooga.

ELECTRICAL WORLD will again publish the *Unconventional Daily*, a tabloid newspaper, for the delegates to the Edison Electric Institute convention in June at Atlantic City. All delegates are asked to register early and to fill in the registration blanks completely and legibly.

First data released on the solar heated house of Massachusetts Institute of Technology for three mild winter months (1949) showed an absorption of 12,350,000 Btu from the sun's rays and consumption of 574 kwhr in supplementary electric heating (475 kwhr by heating elements in the water storage tank and 99 by the collector pump motor). House net floor area is 608 sq ft. Thermostat setting was 68F.

Latest FPC figures, up to April 1, show coal stocks held by electric utility power plants are sufficient for 66 days, compared with 64 days on March 1 and 100 days on April 1, 1949.

Electric utilities are using more and more fuel oil in their power plants. March use of 7,868,487 bbl was 70.5% greater than that of March 1949. Gas use increased 16%, but coal use decreased 5.7%

The Bureau of Reclamation will dedicate its engineering center at Denver on July 20.

Best guess in Washington is that Congress will adjourn between mid-August and Labor Day. Congressmen will of course be shooting for an earlier date in this election year, but they won't make it.

FPC is speeding up—ever so slightly—the hotly contested Roanoke Rapids case. Date for reopening the hearing to take new evidence has been shifted from June 15 to June 12.

A new boost for television has come from the House Ways and Means Committee. The committee refused to follow the suggestion of Secretary of the Treasury Synder and impose a 10% manufacturers' tax on TV sets. But no change was voted by the committee for the 10% manufacturers' levy on radios.

Divers and engineers are at work stopping the leaks in the bottom of New Zealand's Lake Walkaremoana. The lake is one of the main sources of hydro power in New Zealand's North Island. It is hoped that 70% of the water loss can be stopped.

A beam of 70 million electron-volts, which may open the way to new methods of treating disease and is believed to be the most energetic electron beam ever formed in open air, has been produced in the General Electric Research Laboratory at Schenectady.

Notes From The News

A mural depicting the life of Thomas Alva Edison by Howard Chandler Christy will be unveiled May 16 at the state capitol building in Columbus, Ohio. It is a gift from the state's electric power companies . . . Puget Sound Power & Light Co has formally offered for sale its distribution system to the City of Seattle . . . Ontario is speeding up its program of changing 25-cycle electric districts to 60-cycle power . . . Detroit Edison Co will construct a 16-story building to supplement its general offices at 2000 Second Ave.

British Building 275-Kv Super-Grid

Electricity Authority May Operate Portion at 380 Kv; Construction Is Part of 10-Year Expansion Plan; Experimental Section Already Energized

British Electricity Authority is proceeding with the erection of a 275/300-kv super-grid to reinforce the present 132-kv grid which connects the several parts of the now-nationalized generating and distribution system. Broad outlines of the super-grid are now being worked out, together with a detailed 10-year program of construction. The first segment of the super-grid probably will connect the new Staythorpe power station, in Derbyshire, with the West Melton substation, near Sheffield.

Part of Overall Expansion

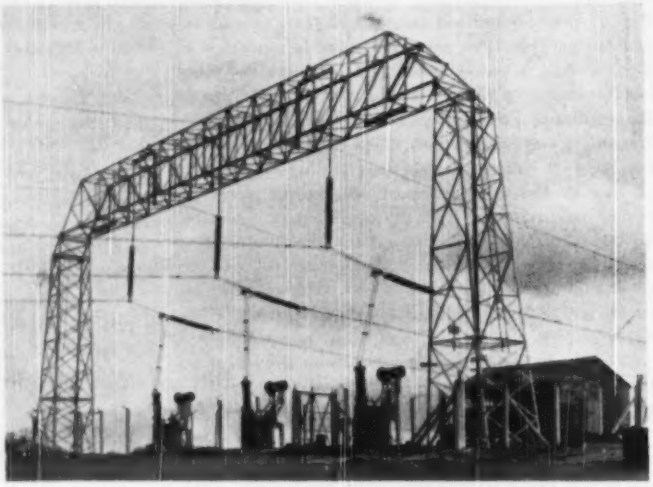
The project now being undertaken, including construction of 38 new power stations, is part of BEA'S overall expansion program intended to meet the nation's probable requirements for the next 20 years. As conceived at present, certain sections of the super-grid may be operated at 380/400 kv. Nominal voltage of most of the super-grid will be 275 kv, although voltage during normal operation may be increased to a maximum of 300 kv, or roughly 10% overload.

Before recommending the 275/300-kv level, BEA engineers explored the possibility of using a still higher voltage, either with alternating or direct current. Although higher voltage might be justified on lines used for bulk transmission, there appeared to be no economic justification for the adoption of a voltage considerably in excess of normal interconnection voltages. However, consideration is being given to designing those towers which will carry circuits likely to be used for bulk transmission to permit an increase in voltage to 380/400 kv if necessary.

Experimental Section Tested

The authority has been preparing for a super-grid for some time. An experimental section of high-voltage, multiple-conductor transmission line, at Leatherhead, Surrey has been continuously energized since Nov. 30, 1949. Normally rated at 275 kv, it has already undergone tests at 300 kv. Experience has made it clear that when transmission was stepped up to 275 kv, voltage was brought into a zone where corona loss becomes a large factor.

This test section, consisting of two 1,200-ft spans, was built primarily to investigate multiple-conductor structure and performance at voltages from 275 to 400 kv. Unlike the Tidd test section and a French test section, BEA's is built so that physical characteristics like conductor spacing can be altered during the experiments. Three gantries (120-ft inside clearance), instead of the usual towers, carry the conductors and ground wires. Two of the gantries are 93 ft high (inside clearance); the third, situated on high ground, is only 50 ft high.



MULTIPLE-CONDUCTOR, 275/300-kv test line near British Electricity Authority's research laboratory at Leatherhead, Surrey, has been energized since last November

The test section has twin conductors —37-strand, steel-cored aluminum cable, with 0.11-in. individual strands— for each phase. The paired conductors are spaced 1 ft apart, horizontally separated by four slat-type wooden spacers per span. Conductors of the three phases are located horizontally at a phase separation of 32.5 ft. Two ground wires are strung in a horizontal plane 20 ft above the conductors, placed symmetrically with relation to them, and spaced 49 ft apart. Ground wires are strung directly from the lower beam of the gantries. Standard cap-and-pin insulators of conventional design are used, with 19 units at suspension points and 17 at tension positions. Stabilized rod-type insulators will be used later.

The line is energized at 275 kv between phases from three single-phase transformers of 300 kva total continuous rating. Tappings give a range of output from 236 to 290 kv. No provision for surge diversion has been made, since experience with the 132-kv grid indicates that it is no great problem. Transformer windings are stress controlled so that each turn acts as a shield for its neighbor. With higher voltages it is expected that lightning faults may decrease to 0.5 or 0.2 per 100 miles per year.

The most important measurement at Leatherhead is the power loss, due mainly to corona. Accordingly, a recording wattmeter (20% pf) is connected in the primary on the transformer feeding the center phase. It is proposed to make check measurements on all three phases, but for design use on an actual transmission system using transposed conductors, power loss on the center phase will be the most useful and readily applicable. On a day that was clear and cold, the recorded power loss was equivalent to about 2 kw per mile per conductor. However, on very wet days, losses have been recorded equivalent to 20 kw per mile per conductor.

1949 AIEE Lamme Medal Is Awarded to Laffoon

(See Front Cover)

C. M. Laffoon, Westinghouse Electric Corp engineer, has been awarded the 1949 American Institute of Electrical Engineers Lamme Medal. He was cited "for outstanding contributions to the design of electrical machines, particularly large turbine generators and high frequency generators." The medal will be presented at the summer AIEE meeting in Pasadena, Calif., on June 12.

Laffoon is manager of Westinghouse's AC Generator Engineering Department, Transportation and Generator Division. He developed the first high frequency generators for induction heating and later the first hydrogen cooled high frequency motor generator set.

The AIEE Lamme Medal was established in 1926 through a bequest by B. G. Lamme and provides for an annual gold medal award to an AIEE member "who shows meritorious achievement in the development of electrical apparatus or machinery." When Lamme was chief engineer of Westinghouse in 1917 Laffoon was his assistant.

Laffoon has been concerned with the design of large electrical machines for 30 years with Westinghouse. During that time he has made many direct contributions to the design of generators. In a supervisory capacity in the last nine years he has guided the design of water wheel generators, large ac motors and mercury arc rectifiers as well as turbine generators.

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Florida Board Is Upheld

The power of Pinellas County Utility Board has been upheld by the U. S. Fifth Circuit Court of Appeals. The appeals court affirmed action of a lower court dismissing a suit of the Florida Power Corp charging that the law creating the utility board was illegal. The company claimed the law violated the constitution and laws of Florida, the U. S. Constitution and the Federal Power Act.

Earlier a U. S. district court ruled there was no substantial federal question involved and the appeals court affirmed this decision.

EEI Water Policy Statement Asks Industry-Government Cooperation

INDUSTRY COOPERATION with the federal government in development of the nation's water resources is the keystone of a new policy statement prepared by the Edison Electric Institute.

The statement, approved by EEI's officers and directors, was drafted in response to an inquiry from the President's Water Resources Policy Committee. It is expected that further action on the policy proposal will be taken at EEI's forthcoming annual convention, June 5-7, at Atlantic City.

The 15-point statement contains recommendations for changes in federal development laws and practices to permit private enterprise and other non-federal sources to finance and operate power phases of major water projects. Other provisions call for preconstruction justification of such projects on a sound basis, economic and realistic operation of completed developments, and equitable distribution of federal energy.

The statement describes EEI's "basic position" on water resource development as favoring "sound economic development and utilization" of such resources "in the public interest." The statement recognizes that "flood prevention, water supply, reclamation and navigation" projects of the federal government often involve power development that "is economically feasible and should be made." The suggestions for developing such power follow:

1. Government should encourage development by private capital of power phases of water projects.

2. Existing programs of local suppliers should be included in federal reports dealing with power demand and supply.

3. Much river basin development can be accomplished by non-federal capital. There has been ample demonstration that the construction and operation of non-federal projects in a stream or river basin can be coordinated with federal development in other parts thereof.

4. Local agencies, not the federal government, should be responsible for the adequacy of power supply for non-federal needs. The responsibility for meeting the demands for power throughout the nation should continue to rest on the shoulders of private capital and of local governmental agencies.

5. All projects should be economically justifiable . . . on the basis of standards uniformly applicable among the several federal agencies. Construction estimates should be realistic and complete. Benefits should have substance and should take into account offsetting detriments.

6. Benefits should be required to exceed costs by a substantial margin.

7. Power developments should be truly self-liquidating . . . as to both capital and interest.

8. There should be no subsidies for power development (such as) supplying power at less than cost (or) subsidization of other functions of multiple purpose developments.

9. Power should be sold at market value (and) yield at least the anticipated or appraised annual monetary benefits.

10. Federal power projects should pay taxes or tax equivalents.

11. Licensing under the Federal Water Power Act should be encouraged (both for) development of power at federal dams (and for) non-federal construction of dams and reservoirs.

12. Existence of Congressional authorization of a project should not preclude non-federal construction (by) investor-owned companies, municipalities, districts and other local agencies (willing to build and operate such) project, or any part thereof . . . in the public interest.

13. Disposition of power should be by non-federal marketing. Contracts for disposing of power from federal dams should not impose conditions which preempt the authority of duly constituted regulatory bodies.

14. Federal power should be sold without discrimination or preference as to availability, price, or contractual provision.

15. Some water uses should have precedence over use for power (including) municipal supply.

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W. R. SMITH, a former chairman of EEI Accident Prevention Committee, is honored on retirement from Public Service Electric & Gas Co and the committee. Left to right are D. C. Stewart, Niagara Mohawk Power Corp; E. J. Kreh, Duquesne Light Co; W. T. Rogers, Ebasco Services, Inc, present chairman; Smith; and H. O. Sprinkle, Monongahela Power Co. Smith was presented with a scroll of signatures of his associates by Rogers at the committee meeting held in Chicago May 1 and 2. About 40 persons attended the sessions

EEI Committee Considers Ways to Improve Utilities' Safety Record

CONCERN ABOUT the slow progress in improving the safety record of the electrical utility industry motivated much of the early discussion at the Edison Electric Institute Accident Prevention Committee meeting in Chicago, May 1 and 2. H. J. Crisic, Cleveland Electric Illuminating Co, had reported a 5% improvement in frequency rate for 1949 but an increase of 12% in severity rate (167 fatalities vs 141 in 1948).

Consensus was that more executive collaboration in assuring authority for enforced compliance with safety rules was indicated. Also desired was more thorough reporting of accident details so that actual causes could be better identified and correlated toward more intelligent prevention along specific channels.

Amazement was expressed at the assertions of a doctor in a radio magazine article that was given wide circulation in a house organ. The article listed insanity, atrophy, and amnesia as consequences of light electric shocks. The attitude of the committee was that the dire predictions were completely unfounded and should be refuted.

Show of hands on questions of practice indicated that there is still wide variance as to method of grounding for protection of men operating gang disconnect switches. A majority indicated that it is the practice to splice underground circuits of 600 v or less, but none reported splicing 5 or 2.4 kv circuits alive.

Hazards in connection with installation of television antennas came in for fresh discussion. The installers' association has asked for collaboration in disseminating information about the risks.

Progress in preparation of visual aids for preventive education in connection with accidents in generating stations was reported. F. G. Harriman, New England Electric System, said a "shooting script" had been prepared. By way of anticipating accidents in generating stations W. F. Brown said his department had suggested some 160 details to guard against in the design of a possible future power plant on the Consolidated Edison system.

Among the new devices demonstrated was a Demand Pneophore (Mine Safety Appliances) which automatically switches to unlimited supply of oxygen when a shock victim begins to recover and gasps for more air. Another was an electronic detector (Electro-Alarm Sales) for boom mounting to warn crane operators of approach to energized conductors; it was reported sensitive to 66 kv at 100 ft and is being developed for disclosure of faulty insulators at comparable distances. Still another product was a Dielectron hot-dip plastic insulation of climbing irons to 20-kv and a cold dip for plastic-handled screwdrivers.

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EEI Puts Out Cookbook

A guide to electrical cooking has been prepared by the Home Service Committee of Edison Electric Institute. Copies of the booklet, entitled "Carefree Cooking Electrically," may be purchased from Edison Electric Institute, 420 Lexington Ave, New York 17, N. Y.

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Named to Canadian Board

Jock Fraser, Hartland, N. B., and H. R. Ross, St. John, N. B., have been appointed members of the New Brunswick Electric Power Commission by the New Brunswick government.

Private vs Public Power Argued before C of C

Conflicting efforts of the electric utility industry fighting public power in order to survive on the one hand and cooperating with federal power agencies on the other were brought into sharper focus last week in Washington.

Power company officials and a leading spokesman for federal power discussed "Can Federal and Private Power Live Together?" at a round table discussion sponsored by the U. S. Chamber of Commerce's natural resources department. More than 250 businessmen attended the session.

Assistant Secretary of Interior William L. Warne argued that the demand for power exceeds the capacity of generation by both government and the industry.

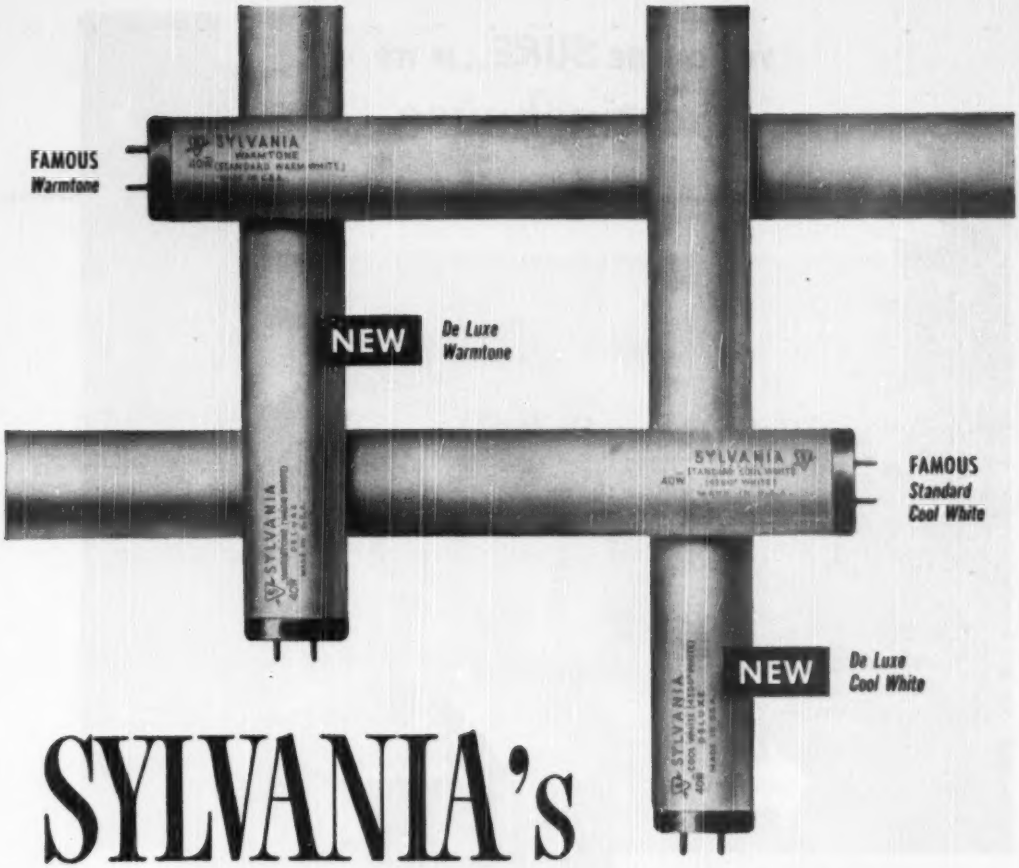
"The question," he declared, "is not whether public and private power agencies can live together, but whether public and private agencies, working together at top speed, can expand power output fast enough to sustain our dynamic American economy."

"The plain fact is that, except during periods of severe economic depression, supply of electric power in this country has never caught up with demand."

This statement was challenged by Richard K. Lane, president of the Public Service Co of Oklahoma, who said there now is 20% reserve capacity in the Southwest.

Tossing aside a prepared speech, Lane discussed in detail the contract which he negotiated with Southwestern Power Administrator Douglas G. Wright.

A report on public and private power cooperation in the Northwest was given by Kinsey M. Robinson, president of Washington Water Power Co. He asserted the Northwest Power Pool has created savings equal to capacity costing an estimated $300 million.



SYLVANIA's

New Fluorescent Lamp Tones AVAILABLE NOW!

Sylvania's 1950 range of fluorescent lamps now offers softer, warmer, DE LUXE tones for immediate delivery.

DE LUXE COOL WHITE . . . a brilliant development from already popular Standard Cool White. New advances in chemistry have enabled Sylvania's experts to release more red radiation from the lamp . . . giving an extended range and more flattering tones. STANDARD COOL WHITE (4500°) will, of course, remain a leading favorite in the general lighting of work areas.

DE LUXE WARMTONE . . . it's the latest version of the pioneer Warmtone. The new DE LUXE lamp, with peak red radiation, produces a cosmetic effect wherever high visibility has to be achieved without harshness. STANDARD WARMTONE (Warm white), having the highest efficiency of all white lamps, will continue in popularity for preserving natural appearances in home, business and factory.

Remember, all four lamps have all four of Sylvania's famous qualities . . . "Triple-Life" . . . ease of installation . . . freedom from end-darkening . . . and built-in quality. Write for details to Sylvania Electric Products Inc., L-2505, 1740 Broadway, New York 19, N. Y.

SYLVANIA ELECTRIC

FLUORESCENT LAMPS, FIXTURES, SIGN TUBING, WIRING DEVICES; LIGHT BULBS; RADIO TUBES, TELEVISION PICTURE TUBES; ELECTRONIC PRODUCTS; ELECTRONIC TEST EQUIPMENT; PHOTOLAMPS; TELEVISION SETS

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

Neat Case...

for Residential Distribution

Underground!

It's a neat case that covers the new Westinghouse Semi-Buried Distribution Transformers for modern residential areas.

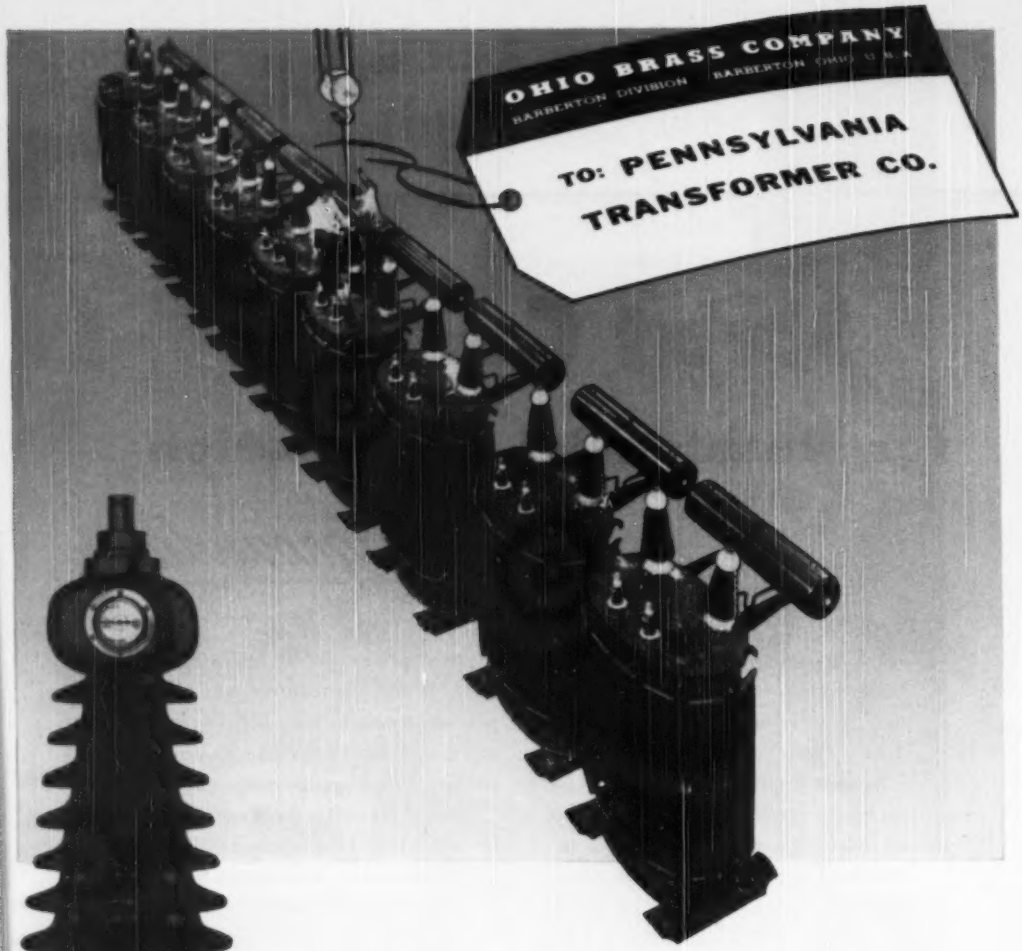
Because they eliminate the need for unsightly poles, they help you get all the advantages of underground distribution . . . at a cost far below subway-type installations. Easily and inexpensively camouflaged, they enhance real estate values, create good will.

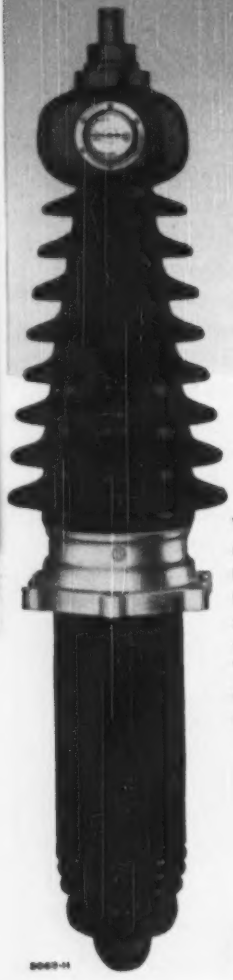
The steel housing locks securely in place on a concrete base that supports the transformer partially below ground level. It can be removed quickly to provide access to terminals. Ventilating grilles and baffles assure adequate cooling, guard against tampering.

Heart of the unit is the Westinghouse Distribution Transformer ("CSP"® or Conventional). This design handles residential services using transformers 50 kva and below. For further information, contact your Westinghouse representative or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-70552

Westinghouse

DISTRIBUTION TRANSFORMERS





These nine new Pennsylvania transformers have recently gone into service in the Southwest. Significant features of these units are pointed out by their manufacturer... "Rating, 833 kva. High voltage, 66 kv. Low voltage, 2400/4160 Y x 7200/1247 Y. Single phase, 60 cycle, 55-degree rise. Oil filled, expansion tank type, with bracing to withstand ten pounds pressure and full vacuum. Manufactured under Pennsylvania's Standard Parts Method which passes on a substantial saving to the buyer. New and improved radiator arrangement around tank provides adequate cooling in a minimum floor area. New base design to simplify jacking, pulling, rolling, and painting. And..."

BUSHINGS ONE OF THE FINEST COMPONENTS OF ANY TRANSFORMER

Ohio Brass MANSFIELD OHIO

Niagara Falls Energy Center of Controversy

The fight over development of Niagara Falls power is on at Washington. President Truman has sent to the Senate the treaty signed with Canada in February (EW, March 6, p 11) to reallocate between the two countries the waters of the Niagara River. He strongly urged its ratification.

On the heels of the presidential message came a definite proposal for public development of Niagara power. New York Democrats Sen H. H. Lehman and Rep F. D. Roosevelt, Jr, introduced identical bills to have the federal government construct power installations and sell them to the State of New York. Presumably the state's Power Authority would make the purchase and operate the plants.

There seems little chance that the Lehman-Roosevelt bills will pass this year. The treaty will most likely be ratified. It allocates the U. S. more water for power use at Niagara. Now Canada receives the greater share.

Following ratification of the treaty Niagara Falls Power Co is expected to apply for a Federal Power Commission license to construct additional facilities. Its plants at the falls have a capacity of 440,000 kw.

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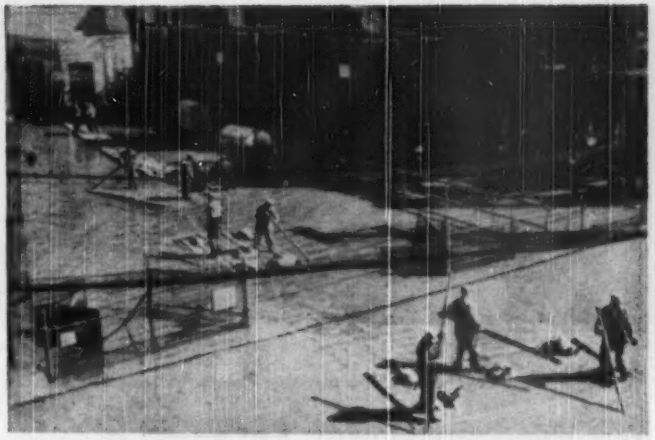
Power Salesmen Urged to Meet Management

Industrial power salesmen must get better acquainted with their customers' plant management in order to be more helpful in solving the customers' community relations and other local problems. This was the message of P. V. Hayden, Connecticut Light & Power Co, speaking to over 100 members of the Interstate Power Club in New York, May 8. He said that most power salesmen don't go further than the plant engineer and purchasing agent when calling on customers.

J. Wesley Cable, consulting engineer, New York, estimated that within the next five years at least half of the existing 6,000 foundries in the United States would switch to dielectric sand core baking—with a potential load of 100-200 kw per foundry.

He said that the removal of water was the largest single potential application of dielectric heating. In describing the relatively high speed of induction heating, Cable reported that 2,000 to 3,000 Btu per sq in. of surface was not uncommon as compared with 25 to 50 Btu with a gas torch.

A new electric radiant heater consisting of an insulating glass base with a fired-on, electrically conducting coating on the surface was described and demonstrated by Dr W. W. Shaver, Corning Glass Works. Dr. Shaver described an installation of these heater panels used to dry the lacquer finish on cellulose acetate sheets which was found to be the most efficient drying unit for this purpose. In addition to a large saving in heater space, the installation cost was estimated to be only one tenth that of the previous heating unit.



RAFTING in sand bags, workers attempt to save from further harm electric facilities in Winnipeg, Canada. The flood followed the breaking of a dike on the Red River

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Northwest Unit Studying Electric House Heating

. The job of investigating the controversial electric house heating problem has been taken on by the Northwest Utilities Conference Committee, made up of management representatives of the Northwest Power Pool.

C. A. Erdhal, Tacoma, Wash., commissioner of public utilities, suggested formation of the committee to help cope with the power supply problems of the Northwest.

The committee has retained C. T. Hurd to make an 8-month survey of the space heating problem. Formerly manager of the Cowlitz County PUD, Hurd was a representative of the Northwest Public Power Association on the committee.

Since the conference committee represents both private and public power in the Northwest, the results of the investigation will be available to all utility serving agencies of the region. Findings will serve to guide them in the formation of policy regarding rates and acceptance of space heating load.

Chapman Airs Objection to SPA-Utility Contract

Interior Secretary Oscar L. Chapman says he will not approve a contract between Southwestern Power Administration and Oklahoma power companies "which in any way restricts" the preference status of municipal electric systems.

Chapman's brief statement May 5 was his first public discussion of the contract agreed to by SPA Administrator Wright and Oklahoma companies last December. His staff said Chapman's statement was in answer to telegrams received from Oklahoma cities protesting the proposed contract.

Chapman's objections centered about provisions under which SPA could take certain preference customers from the companies, but would pay the companies their wholesale rate for power delivered to these customers.

"I will not approve any contract for the sale of public power—in the Southwest or elsewhere—which does not fully safeguard the preferred status of public agencies and cooperatives and which does not otherwise conform to the requirements laid down by Congress in the public interest," Chapman declared.

Negotiations aimed at ironing out Chapman's objections to the proposed contract are continuing in Tulsa, Okla.

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Granted 25-Year Franchise

Southwestern Electric Service Co has been granted a 25-year franchise by Mart, Texas. The present franchise expires in the near future.

SPEAKERS at PEA Industrial Sales Conference included Dr Patrick Conley, left, Westinghouse; R. G. Ely, Public Service Electric & Gas; G. R. Conover, Philadelphia Electric. In right panel are committee officers: F. F. Dickmann, West Penn Power, Industrial, vice-chairman; P. G. Dingledy, Pennsylvania Power, Business Development Section, chairman; O. H. Marshall, Pennsylvania Electric, Industrial, chairman

'We Have the Power; Let's Sell It' PEA Industrial Conference Told

WE HAVE POWER for sale! Let's sell it! This was the theme of the Industrial Sales Conference sponsored by the Industrial Committee of the Pennsylvania Electric Association at Bedford Springs, May 2-3. More than 100 power sales engineers attended.

George R. Conover, Philadelphia Electric Co, said that the power salesman is in a unique position to bring the advantages of private ownership of public utilities to his customers, and their appreciation of personal service will do much to combat the adverse information given out by the proponents of government control and ownership. He told the group that the application of electronics in industry seems to hold the greatest possibility as a potential use of electric power.

The answer to speeding industrial sales, according to R. G. Ely, Public Service Electric & Gas Co, Newark, is through the augmentation of personal customer contact with mass selling methods—using such promotional activities as the Westinghouse "Productive Power Show" and the General Electric "More Power to America" program.

Ely reported on a recently completed survey of power sales methods and policies of 36 utility companies conducted by the Sales Policies and Methods Subcommittee of the EEI Industrial Power and Heating Section. The survey showed that for 24 of the companies having nearly comparable situations, an average of approximately 72 calls per month were made, nearly equally divided between sales and service. Complaints were lumped under service. A further analysis of 21 companies, not necessarily the same ones, showed an average of 200 customers per man or only 4 1/3 calls per customer per year, and of these calls, a little over 2 calls per customer would be devoted to sales.

It was pointed out by George E. Duerr, West Penn Power Co, that many competitive jobs arise in plants where process steam needs are encountered. Sometimes, the utility representative is inclined to walk away from such jobs without investigating the validity of by-product generation. In many cases because of the irregularity of the steam need and the high cost of equipment, there is every reason to question the economies of by-product generation.

To help the power man make such a study, Duerr said that the Power & Heating Section of EEI will shortly release a supplement to Section 9 of the Power Sales Manual. This supplement will point out the many angles which must be considered if a true evaluation of cost is to be made.

Dr Patrick Conley, Westinghouse Electric Corp, discussed the control, generation and applications of ultrasonics in industry and demonstrated the emulsification of mercury in water by this method. He reported that the University of Pennsylvania has successfully applied ultrasonics to the washing of clothes. He said that clothes had been washed electrosonically in 60 minutes that required 50 washes or

ACTIVE at PEA Industrial Sales Conference were, left to right, front row, F. P. Mahon, Duquesne Light Co; R. H. Rensch, General Electric Co; H. V. Crawford, General Electric Co; rear row, E. A. Linsday, R. D. Faytinger, W. D. Lee, and G. R. Taft, all of General Electric. In right panel are J. Wesley Cable, consulting engineer, New York; C. S. Schroeder, Yale & Towne Manufacturing Co; Clarence T. Shoch, Pennsylvania Power & Light Co; George E. Duerr, West Penn Power Co; and Edward S. Hegarty, Westinghouse Electric Corp

1,000 minutes by regular commercial methods for equivalent results.

According to G. R. Taft, General Electric Co, three-phase transformers are purchased almost exclusively today in industrial substation service in lieu of three single phase transformers. He said that this reversal of trend is largely due to the excellent operating record of modern three-phase transformers and cited a recent survey of 12,000 non-inflammable liquid filled transformers which showed a failure of less than .2 of 1% from any cause whatsoever.

It is not economical to generate power at a sewage disposal plant smaller than that size required to serve ½ million persons or having less than a 15,000-kw demand. This was the opinion of H. V. Crawford, GE. He said that there is today a 2 billion-kwhr annual potential for utility companies in modern sewage disposal plant electrification.

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Niagara Mohawk Plans to Construct 2 Plants

Niagara Mohawk Power Corp will build a large steam-electric generating plant on the Hudson River at Albany, and a hydroelectric plant on the Sacandaga River at Stewarts Bridge, 50 miles northeast of Albany.

Construction will begin soon on a 160,000-kw steam electric station on the west shore of the Hudson, 3 miles south of Albany. The utility is applying to the Federal Power Commission for a license to construct a dam and a 30,000-kw power plant on the Sacandaga River. Work will begin as soon as the license is granted.

The Albany plant will be designed for ultimate expansion to four units with an installed capacity of 320,000 kw. Two 80,000-kw units will be built now and are expected to be in operation late in 1952. Both oil and coal are being considered as fuel. Each 80,000-kw unit will have its own boiler and generator. Facilities for coal loading, oil storage, and machine shops will be designed to meet the requirements of the station as it expands.

The proposed development at Stewarts Bridge will consist of an earth dam, about 1,400 ft long and 112 ft high, located just below the state dam which impounds the Sacandaga Reservoir. The new dam would create a reservoir of about 470 acres and give the power plant a head of 100 ft.

The installed generating capacity of the Niagara Mohawk System will reach 2,368,000 kw when the two plants are in operation.

EEI Equipment Group Discusses Features of Massachusetts Station

If load-center substations are so acceptable for residential and industrial service why aren't they appropriate for auxiliary supply in power plants? The answer along with other distinctive features of the new West Springfield station of Western Massachusetts Electric Co, constituted one of the major features of the Edison Electric Institute's Electrical Equipment Committee meeting in Chicago, May 3.

Chief Engineer J. W. Bennett explained that the plant is only ½-mile from the Springfield City Hall (by submarine and bridge cables) and close to the system load center. Because distribution and system administration is imposed on the accompanying control building it was deemed unwise to adopt centralization of control. Fans and precipitator on the roof, separate riverbank pump house for the circulating system and all 13.8-kv switching outdoors via isolated phase generator leads were other significant details.

Short runs permit 460 v auxiliary service for the 40/50-Mw initial unit. Each successive unit will have a similar ring bus with 17 in-between connections controlled by 9 or less breakers; this impedance set up will avert early increase in interrupting capacity of some 80 feeder breakers.

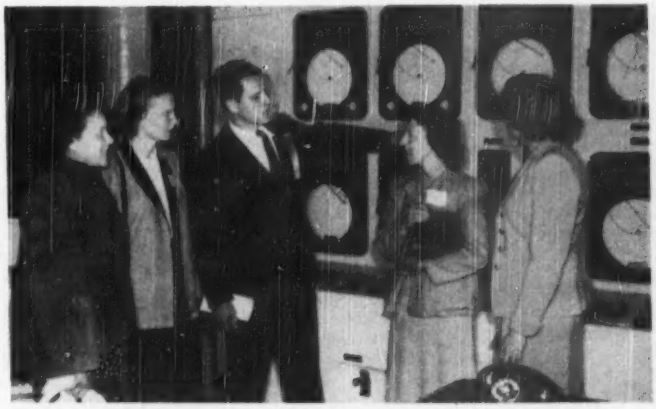
A functionalized control board simplified to a point where control-room space is halved was presented by H. L. Lowe, chief electrical engineer, Ebasco Services, Inc. Details will appear in an early issue of Electrical World. The author hazarded the proposal that hourly automatic photographing of the instrument indications along with the back-of-panel recorders might obviate the need for log records by the operators.

Progress on preparation of battery specifications was reported by the subcommittee chairman W. C. Bowen, West Penn Power Co. Thorough study is being given to the possibility of better economic balance between battery capacity and outlay and the limitations of voltage-range of the control coils and magnets on circuit breakers.

Keen discussion followed an outline of the supervisory training program being undertaken at Pennsylvania Power & Light Co by S. C. Townsend and J. S. Viehe, aided by R. C. Buell, Ebasco. The 1,300 supervisors themselves proposed 1,434 topics for monthly 2-hour conferences with groups made up of all departments, the executives participating at the supervisory level.

The 3-way exchange of information (up, down and across) is producing results that indicate the employees are really beginning to want to understand the problems of the utility business.

Lesser items were the dissenting attitude toward the new NEMA standards for power switchgear assemblies (SG5-1950), largely because of permissively high temperature rise for the cable terminals and the retention of 24-v control in unit substations.



HAROLD A. NOBLE, *center, general superintendent of the San Diego Gas & Electric Co, describes the governing mechanism at the head of a 35,000-kw turbine to teachers visiting the plant as part of "Business Education Day," held during the Easter vacation*

Yields—Operating Electric Utility Securities

Date or Period	Bonds			Preferred Stocks			Common Stock		
	1st Quality	2nd Quality	3rd Quality	1st Quality	2nd Quality	3rd Quality	1st Quality	2nd Quality	3rd Quality
1950									
May 4	2.68%	2.84%	2.73%	3.76%	4.00%	4.35%	5.19%	5.96%	5.67%
Apr. 27	2.61	2.83	2.72	3.77	4.01	4.36	5.23	5.94	6.70
1949									
May 2	2.70	2.78	2.91	4.05	4.36	4.70	5.71	6.53	7.83
Apr. 25	2.71	2.78	2.92	4.04	4.33	4.70	5.75	6.58	7.90
END OF LAST FOUR QUARTERS									
1st 1950	2.59	2.61	2.71	3.78	4.01	4.36	5.22	5.85	6.67
4th 1949	2.59	2.61	2.72	3.85	4.06	4.46	5.37	6.15	7.01
3rd 1949	2.61	2.65	2.77	3.88	4.15	4.54	5.55	6.47	7.51
2nd 1949	2.69	2.75	2.88	3.98	4.26	4.66	5.94	6.96	8.14

Data: Reis & Chandler, Inc.

Utilities Raise Almost $33 Million New Money in Two-Week Period

NEW MONEY financing by electric utilities totaled $32,772,000 in the two-week period ended May 8. Such offerings aggregating $30,751,000 were indicated for the week ending May 15 by ELECTRICAL WORLD's report on electric utility financing, a new service to its readers.

Securities sold for other purposes, including refunding, exchange of preferred stock, and divestment, amounted to $113,184,000 over the two weeks to May 8. Twenty million dollars' worth of bond refunding was scheduled for the next week.

Largest single new money issue in the April 24-May 8 period was the $11-million sale of 110,000 shares of no-par $4 preferred by Texas Electric Service Co. Offering price was $100. Yield at the price paid the company was 4.05% and at the price to the public 4%.

The same company also offered 65,000 shares of no-par $4.56 preferred to be exchanged for $6 preferred on a share-for-share basis with a dividend adjustment. This offer expires May 26.

Other preferred new money sales were composed of $826,000 by Central Vermont Public Service Corp, $2 million by Idaho Power Co, $7 million by Texas Power & Light Co, and $3 million by Rochester Gas & Electric Corp.

Rochester's issue of 80,000 shares of 4.10% Series H $100-par preferred, sold at par, included 30,000 new money shares and 50,000 offered in exchange for 4¾% preferred with a cash payment of $5.1625 per share exchanged. In addition to its new money sale of 70,000 shares of $4 no-par preferred, sold at $100, Texas P&L offered 133,786 shares of $4.56 no-par preferred at $110 in exchange for 7% and $6 preferred. The exchange is being made on a share-for-share basis with a dividend adjustment and with a cash payment of $5 a share on the 7% stock exchanged.

Idaho Power's 4% $100-par preferred, priced at $100 to the public, was sold to Boise underwriters, who agreed to take 10,000 shares and held an option for 10,000 more. Interest cost to the company was 4.09%.

Price of Central Vermont's 8,000 shares of 4.75% dividend series $100-par preferred was $103.25 a share, with a 4.74% interest cost and a yield to the public of 4.60%. The same company sold the only new money bond issue of the period, $2 million of first mortgage 2⅞% bonds due 1980. Offering price was 102.54%, with interest cost to the company 2.78% and yield to the public 2.75%.

The only other bond sale was a refunding issue by Public Service Electric & Gas Co aggregating $26 million. The first and refunding 2¾% mortgage bonds due 1980 were offered at 101.75%, with yield at the price to the company of 2.69% and at the public price of 2.665%.

Largest item of the two weeks was Cities Service Co's offering to its stockholders of rights on a one-for-one basis to buy 3,702,000 shares of Toledo Edison Co at $9. Rights expire May 29.

Only note sale of the period was American Gas & Electric Co's offering of $27 million in 2½% serial notes, maturing 1952-1965, to retire all preferred and some serial notes issued in 1946. Offering price was 100.961%, based on the average of the several maturities, with yield at the company's price 2.45% and at the public's price from 1.55% to 2.60%.

Scheduled for the week of May 8 to 15 were sales of $30 million in Potomac Electric Power Co 2¾% first mortgage bonds due 1965; and common stock aggregating $20,751,000 by Pepco, Dayton Power & Light Co, and New England Gas & Electric Co. One third of the bonds were to be new money and the remainder refunding. Pepco planned to use $20 million to redeem 3¼% bonds due 1966.

Security Offerings by Electric Utilities
(In Thousands of Dollars)

	New Money	Other
TWO-WEEK PERIOD, APRIL 27 - MAY 8		
Bonds	$ 2,000	$26,000
Notes		27,000
Preferred Stock	23,826	26,866
Common Stock	8,946	33,318
Totals	32,772	113,184
SCHEDULED WEEK OF MAY 8-15		
Bonds	$10,000	$20,000
Common Stock	20,751	
Totals	30,751	20,000

FINANCIAL BRIEFS

Utilities that file annual reports with Federal Power Commission now may submit copies of the same reports to Securities and Exchange Commission in satisfaction of most of the requirements of the latter's Form 10-K. Information not contained in the FPC reports must be supplied separately, and financial statements must be prepared and certified in accordance with SEC's accounting regulations.

Stockholders of Community Public Service Co, Fort Worth, Tex., gave approval to a proposed 3-for-1 split of the common stock at their annual meeting May 2. Directors had voted to split each share of the present $25-par stock into three shares of $10 par value.

Power of the Securities and Exchange Commission to stop a stockholder committee from soliciting funds to fight an SEC action has been upheld by the U. S. Court of Appeals. The action arose when a committee of Long Island Lighting Co common stockholders asked SEC authority to solicit a 5¢-a-share contribution to fight an SEC order directing recapitalization of the company.

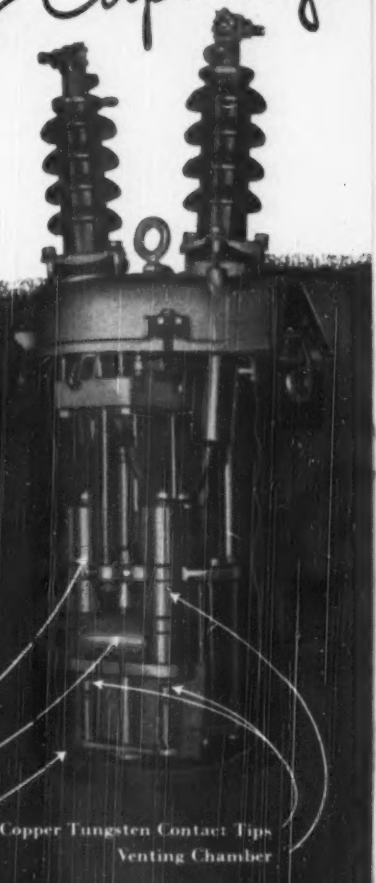
Oklahoma's state tax commission has recommended a 4.34% increase in public utility property valuations for 1950. Oklahoma Gas & Electric Co would be boosted from $33,429,681 for 1949 to $36,179,861, and Public Service Co of Oklahoma would be assessed at $30,952,210 instead of $28,672,677. Valuations in 1949 were 6.28% above those of the year before.

UP TO

4,000 Amps. Interrupting Capacity

IN THE TYPE "L"

KYLE OIL CIRCUIT RECLOSER



This was the first recloser actually designed and engineered for heavy duty service; its performance has proved its quality. Gives Kyle recloser protection with all the outstanding Kyle features, on lines with loads up to 100 amps and fault currents as high as 4000 amperes. These heavy fault currents can be handled successfully because of the Kyle *oil cross blast* method of arc extinction.

SPECIAL FEATURES

This heavy duty type L recloser offers:

Operating voltages, phase to phase, 2.4 to 15 kv

Ratings: 25, 35, 50, 70, and 100 amperes, for minimum **tripping currents** of 50, 70, 100, 140, and 200 amps, respectively. Coils are interchangeable in the field

Precise coordination with line or back-up fuses, sectionalizers, other reclosers, and breakers

Insulation level meets A.S.A. standards for 15 kv power circuit breakers. **Impulse** level 110 kv

Control mechanism fully hydraulic, virtually free from variations caused by oil temperature viscosity changes; rugged, shock-proof; trouble-free. Trip-free operating handle; many other safety features

Size approximately 37" high, tank 11" diameter. Large sleet hood protects operating handle and counter; may be rotated in 90 degree steps

Weight with oil, 170 pounds

Greater Accuracy; Wider Choice of Operating Sequences

Three reclosures before locking out. **Standard sequence** is two fast operations, two retarded (two curves A, two curves B in chart).

Optional Sequences easily changed in the field: four fast operations (four curves A); *or* two fast and two extra-retarded (two curves A, two curves C).

Other Sequences and time current curves available from the factory.

LINE MATERIAL COMPANY, Milwaukee 1, Wis.
(A McGraw Electric Company Division)

New oil cross blast arc extinction!

Provides minimum arcing time and freedom from restrikes at all current values and power factors within the recloser rating. Arcs are drawn in series. Arc in the pressure chamber forms gas which blasts oil into the venting chamber, extinguishing the arc.

Pressure Chamber

Cross Blast Chamber

Quick Make, Quick Break Contact Action

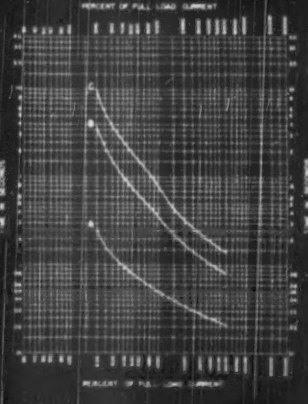
Copper Tungsten Contact Tips

Venting Chamber

Time Current Curves!

Read all about it!

Get the whole story, in this easy-to-read illustrated bulletin. Ask the L-M Field Engineer for a copy or write **Line Material Company, Kyle Products Plant, Milwaukee 1, Wis.**



LINE MATERIAL KYLE RECLOSERS

Complete Coordinated Equipment for All Dist

CHEVROLET sign at north end of Times Square looks small but is 100 ft wide. Letters are 20 ft high, trademarks at side are 13 ft wide. Some 10,000 40-w incandescents are used in sign

BOND spectacular is a city block wide. Fig 50,000 gal of water a minute. In circle at

The Lights Of Times Square

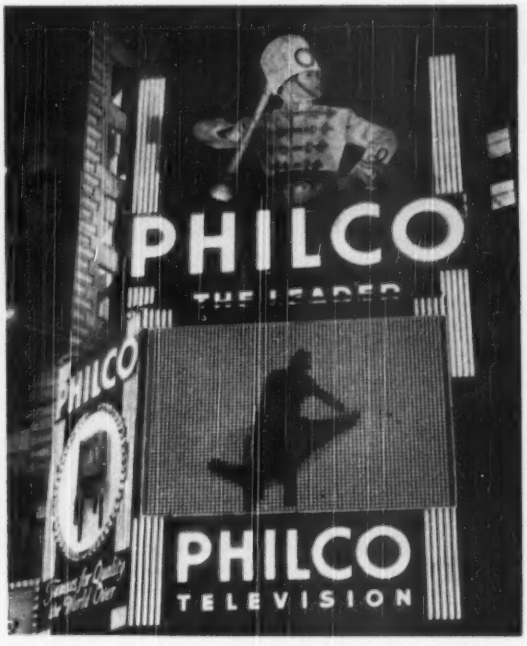
TO THOUSANDS of visitors to New York City one of the most fascinating sights is the lights of Times Square. From the tops of most buildings surrounding the Square blaze forth the greatest collection of electric signs in the world. Many of these are the huge, animated displays called spectaculars. These provide a free show for the milling crowds below. Many of the signs are owned and operated by Douglas Leigh, Inc. This firm, working in conjunction with the advertiser, designs the signs and then rents the space for five-year periods. The signs are not only triumphs of electric lighting in practically all its forms but of many other electrical and mechanical applications. On this page are a few of the bigger installations. Most of them will be familiar to those who have recently visited New York.

EVEREADY flashlight, 26 ft high, 6 ft wide costs 800 million-cp beam 5½ miles into sk

50 ft tall. Between them a waterfall uses
rrect time changes at one-minute intervals

CAMEL sign has long been a favorite because smoker blows perfect smoke rings. Face of the smoker is changed periodically. Note that light from signs makes street lighting unnecessary

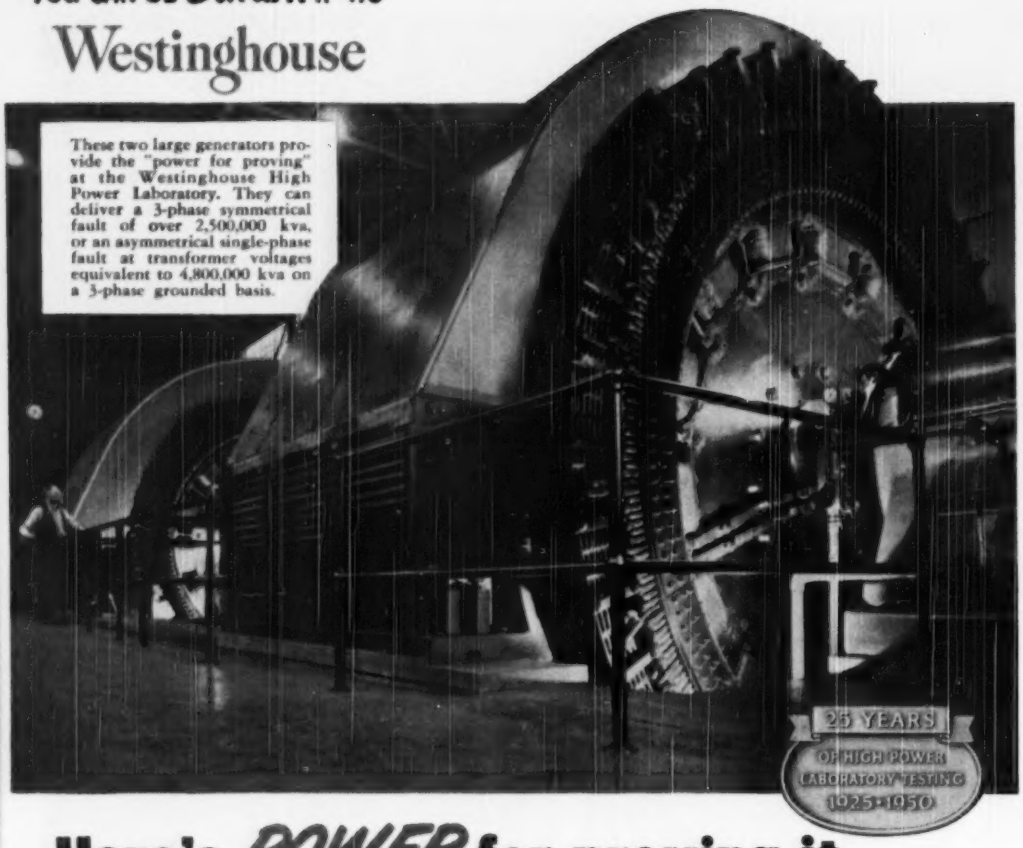
ILLETTE features a clock with a swinging pendulum. Bright walls
f building at the right indicate intensity of artificial illumination



PHILCO cartoon has long been a crowd stopper. Here a toreador waves his cape to attract bull. Cartoon panel is composed of 4,000 lamps

YOU CAN BE **SURE**... IF IT'S

Westinghouse


These two large generators provide the "power for proving" at the Westinghouse High Power Laboratory. They can deliver a 3-phase symmetrical fault of over 2,500,000 kva, or an asymmetrical single-phase fault at transformer voltages equivalent to 4,800,000 kva on a 3-phase grounded basis.
25 YEARS
OF HIGH POWER
LABORATORY TESTING
1925-1950

Here's *POWER* for proving it

Many electrical products are required to interrupt heavy currents under fault conditions . . . carry great amounts of current for a short time . . . perform consistently under repetitive short-circuit conditions. Oil circuit breakers, air circuit breakers, reactors, disconnecting switches, transformers, and many other pieces of electrical apparatus come under this classification.

That is why, 25 years ago, Westinghouse installed its High Power Laboratory at East Pittsburgh. We wanted to be sure that every piece of apparatus bearing the Westinghouse name was designed to function properly under short-circuit conditions.

In this High Power Laboratory we have the equipment to do this . . . huge generators to develop fault currents that match those of the country's largest electrical systems, transformers that produce short-time currents to test apparatus for momentary current rushes. This is how we make *sure*...and this sureness is passed along to you.

SEE FOR YOURSELF!

Booklet B-4383 describes facilities, procedures and actual tests conducted at the Westinghouse High Power Laboratory. Ask your Westinghouse representative for a copy, or write directly to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-60722

Westinghouse

HIGH POWER LABORATORY

More New Records Set for Output in February

Again in February output set new records, the Federal Power Commission reports.

Production of energy by electric utilities for that month was 24,269,564,000 kwhr, the highest February production total of record. Production for the year ended Feb 28 was the highest for any 12-month period to date, 293,606,925,000 kwhr, exceeding by 0.4% the previous maximum set during the period ended Jan. 31.

February, 1950, output exceeded that of February, 1949, by 5.5%, and production for the year ended Feb. 28, 1950, was 3% above production during the year ended Feb 28, 1949.

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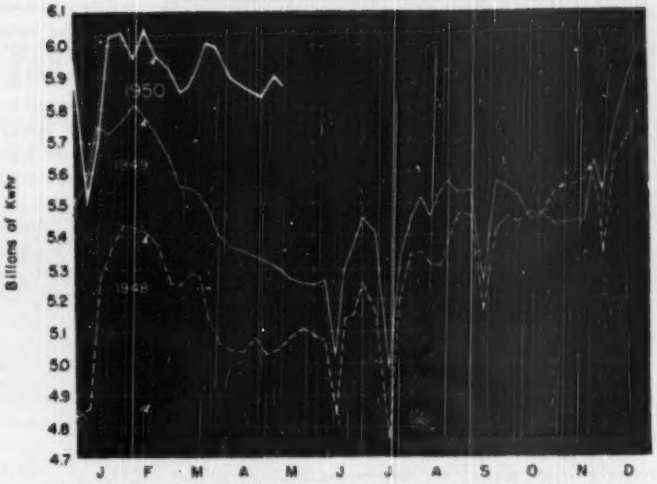
NLRB Certifies IBEW at PG&E, Rebuffs UWU

Nine objections filed by the CIO Utility Workers Union of America to the conduct of the bargaining election at Pacific Gas & Electric Co on Jan 25 have been dismissed by the National Labor Relations Board.

The board certified AFL's International Brotherhood of Electrical Workers as bargaining agent for 12,211 PG&E outside employees. IBEW obtained 6,749 votes compared with 2,550 for the CIO union.

The company's 200 estimators, voting in a separate group, rejected both unions. One hundred eight voted for "no union," 89 for IBEW, and 3 for UWUA.

Previously, IBEW and UWUA each represented groups in the California utility.



Output Week Ended May 6—5,871,684,000 Kwhr

Weekly Output, Millions Kwhr

1950		1949		1948	
May 6	5,872	May 7	5,284	May 8	5,087
Apr 29	5,902	Apr 30	5,304	May 1	5,042
Apr 22	5,846	Apr 23	5,326	Apr 24	5,027
Apr 15	5,863	Apr 16	5,343	Apr 17	5,087
Apr 8	5,898	Apr 9	5,360	Apr 10	5,633
Apr 1	5,992	Apr 2	5,378	Apr 3	5,037
Mar 25	5,993	Mar 26	5,404	Mar 27	5,065
Mar 18	6,015	Mar 19	5,496	Mar 20	5,145
Mar 11	5,937	Mar 12	5,531	Mar 13	5,285
Mar 4	5,879	Mar 5	5,552	Mar 6	5,293
Feb 25	5,854	Feb 26	5,559	Feb 28	5,252

Percent Change from Previous Year

	May 6	Apr 29	Apr 22
New England	+15.1	+18.1	+15.7
Mid-Atlantic	+10.6	+11.3	+ 8.8
Central Industrial	+12.0	+12.3	+ 8.5
West Central	+12.5	+ 9.9	+ 9.7
Southeast	+12.0	+11.4	+12.6
South Central	+12.1	+ 8.6	+10.4
Rocky Mountain	+ 9.3	+10.6	+ 9.6
Pacific Coast	+ 7.9	+ 9.3	+ 8.1
Total United States	+11.1	+11.3	+ 9.8

MEETINGS

Missouri Valley Electric Association
Annual Meeting, President Hotel, Kansas City, Mo., May 16; Accounting Conference, President Hotel, Kansas City, Mo., May 18-19.

Pennsylvania Electric Association
Motor Committee, Hotel Bethlehem, Bethlehem, Pa., May 17-18; Systems Operation Committee, Spring Meeting, Skytop Lodge, Skytop, Pa., May 18-19; Transmission and Distribution Committee, Spring Meeting, Alexander Hotel, Hagerstown, Md., May 25-26; Joint Meeting, Traffic Safety Committee, May 26; Relay Committee, Castleton Hostl, New Castle, Pa., June 15-16; Electrical Equipment Committee, Abraham Lincoln Hotel, Reading, Pa., June 19-20.

American Institute of Electrical Engineers
Conference on Telemetering, Benjamin Franklin Hotel, Philadelphia, Pa., May 24-26; Summer General Meeting, Huntington Hotel, Pasadena, Calif., June 12-16.

Northwest Public Power Association
Accounting Section, Winthrop Hotel, Tacoma, Wash., May 25-26.

Edison Electric Institute
Transmission and Distribution Committee, Cosmopolitan Hotel, Denver, Colo., May 25-26; Annual Convention, Auditorium, Atlantic City, N. J., June 5-7.

Pacific Coast Electrical Association
Annual Convention, Mapes Hotel, Reno, Nev., May 31-June 2.

National Association of Electrical Distributors
Annual Convention, Convention Hall, Atlantic City, N. J., June 12-16.

Canadian Electrical Association
Annual Convention, Manoir Richelieu, Murray Bay, Que., Canada, June 15-19.

American Society of Mechanical Engineers
Semi-annual Meeting, Hotel Statler, St. Louis, Mo., June 19-23.

American Society for Testing Materials
Annual Meeting with Exhibit of Testing Apparatus and Related Equipment, Chalfonte-Haddon Hall, Atlantic City, N. J., June 26-30.

CIGRE
International Conference on Large Electric Systems, Paris, France, June 29-July 8. I. W. Gross, secretary, American Gas & Electric Service Corp., 30 Church St., New York 8, N. Y.

World Power Conference
London, England, July 10-12. H. C. Forbes, secretary, Consolidated Edison Co., 4 Irving Place, New York 3, N. Y.

Changes in Capacity Reported to Federal Power Commission

PLANT ADDITIONS DURING MARCH

Utility	Plant	Fuel	Capacity (Kw)
Norwalk Electric Department	Norwalk, Ohio	S	3,000
Highland Light & Power Department	Highland, Ill.	S	3,000
Illinois Power Co	Havana	S	40,000
The Cliffs Power & Light Co	Ishpeming, Mich	S	7,500
Indianola Municipal Utilities	Indianola, Iowa	IC	1,485
Minnkota Power Co-op, Inc	Plant 3 (N. D.)	S	10,000
Kinston Electric Department	Kinston, N. C.	S	7,500
Tennessee Valley Authority	Wilson Dam	H	25,200
Tennessee Valley Authority	Wheeler Dam	H	39,400
Arkansas Power & Light Co	Cecil Lynch	S	1,000
Houston (Texas) Lighting & Power Co	Gable St.	S	33,000
Idaho Power Co	Bliss	H	25,000
Moon Lake Electric Association	Utah	IC	330
Pacific Power & Light Co	Marvin Project (Ore.)	H	45,000
California-Oregon Power Co	Takatee Falls, Ore.	H	12,166

PLANT RETIREMENTS DURING MARCH

N. Y. State Electric & Gas Corp	Elm St.	S	1,500
Newark Water & Light Department	Newark, Ohio	S	500
Highland Light & Power Department	Highland, Ill.	S	650
Otter Tail Power Co	Devils Lake, N. D.	S	565
Center Municipal Electric Light & Power System	Center, Colo.	IC	116

H—Hydro, IC—Internal Combustion, S—Steam
United States Capacity as of April 1—Steam, 45,155,316 kw; Internal Combustion 1,830,392 kw; Hydro, 16,884,528 kw; Total, 63,860,436 kw

IN THE INDUSTRY

WILLIAM B. WHICHARD

"BE IT RESOLVED that we express our appreciation to the directors and executive manager of National Rural Electric Cooperative Association, the Wisconsin Electric Cooperative, and Reynolds Metals Co for their effort and results obtained in breaking the aluminum conductor bottle-neck." (Resolution adopted at NRECA annual meeting, Chicago, March 6-9, 1950.)

Except for the liberal awarding of kudos, in form such as the above quotation, there has been little solid information concerning the Wisconsin Electric Cooperative-Reynolds Metals Co aluminum conductor contract since it was signed in January, 1949. Not that questions were not asked. But almost always the only comment forthcoming from any of the parties involved was a flat assertion that the arrangement was working out well.

At least a portion of this optimism was dispelled early this year when an accounting firm reported its audit of WEC's activities in 1949. The report dealt in rather general terms with the financial status of all WEC's operations in the equipment supply, engineering and other fields. But it contained enough data on the co-op's aluminum conductor venture to raise the eyebrows of many of the officials of the co-ops doing business with WEC. Apparently, the report, which originally was read at WEC's annual meeting, was not widely distributed. A number of co-op officials at the subsequent NRECA session did not even know of its existence—or said they didn't.

At any rate, the accountants' statement confirmed rumors that the agreement had been considerably revised. The original contract, for example, called for delivery of as much as 715,000,000 lbs of aluminum conductor by Reynolds to WEC over a 14-year period. Co-ops buying conductor from WEC were to advance 4¢ per pound with their orders, 3¢ of which was to go to Reynolds. By mid-May, 1949, Reynolds was to receive $6 million in these advances. This advance guarantee later was cut to $4 million, then to $1,400,000. None of these totals was approached.

The financial report revealed that the advance "deposit feature" of the original contract was dropped, after Reynolds received a total of $808,794.40. The statement implies that the company received the entire 4¢ per pound of the deposits.

If so, this would indicate that Reynolds delivered some $5 million to $6 million of conductor to WEC, calculated on 1949 cable costs. On this volume of business, plus any more done during the year after the deposit feature was dropped, WEC realized what the report termed "1949 savings" of $12,490.74 in its aluminum division. At best, this would amount to a net return of .2% to .3%—a minuscule margin even for a non-profit operation.

This return came nowhere near meeting expenses to WEC. The statement put these expenses at $47,133.74. The $12,490.74 was credited to that account, leaving a balance of "deferred organization expenses" of $34,643. This sum will be paid off, it was reported, "by a charge to future operations at the rate of 1/12 of a cent per pound" on future conductor shipments. And that, of course, means that WEC must ship exactly 41,571,600 lbs of conductor to pay off these "deferred organization expenses." At going prices of the type of conductor most used by co-op power systems, that means about $10,000,000 of conductor.

Meanwhile, WEC has to meet the day-to-day expenses of its aluminum division, which, in turn, must do twice as much business as it did last year just to catch up with deferred costs. If anyone at WEC, Reynolds or NRECA has any idea where all this will end, if it ever does, it would make a story.

Admittedly, the aluminum conductor "bottleneck"—if there was one—is broken. But for WEC, at least, it's beginning to look like costly breakage.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Electrochemical series is a good tabulation to scan to determine whether any two particular metals should be placed in contact and exposed to earth, air, fog, smoke or smog.

Generator damage is one of the major items dictating some form of current limitation at times of fault, such as insertion of impedance in the neutral.

Prick-point connections (common in the communication art) could well be explored as a possibility for live tapping of aerial and buried cable.

One bulldozer is known to have handled coal to the aggregate of 500,000,000 ton-ft before it earned retirement.

Condenser tubes at inlet ends are most commonly protected by Debecote with lesser application of Ferro Primer B to safeguard the tubes.

Transformer noise is usually 120 c frequency, except that large power transformers may exhibit the 360 c of the triple harmonics.

Cable faults are about one-fourth as frequent as overhead line faults but are several times as hard to locate and far less likely to be transitory. Those considerations are important to industrial plants as well as utilities considering *all* costs.

MANUFACTURERS and MARKETS

Railway Age

POLE PEELING machine, multiple drill, and slab gainer have stepped up production in Taylor-Colquitt Co's pole yard 10 to 1 over the hand methods used 20 years ago. View above is close-up of rough and finishing cutter heads of peeler. Pole is rotated by a series of rollers and emerges with knots, rough spots, and inner bark removed

Taylor-Colquitt Expands Vapor-Drying of Poles

Quantity vapor-drying of poles by Taylor-Colquitt Co has been made possible by the recently completed renovation of the company's Spartanburg, S. C., wood-preserving plant.

The firm began using the treatment several years ago but, because of commitments to the railroad industry, was unable to apply it to poles on a large scale. However, Taylor-Colquitt has vapor-dried about 25,000 poles in the past four years.

The renovation cost some $750,000. A straight line pole production machine, which roofs, slab gaines, and bores the pole in straight line production, was installed. Several diesel electric locomotive cranes were purchased and a new boiler plant added.

Rearrangement of treating equipment and simplification of piping now make it possible for one operator and a helper to handle both vapor-drying and preservative treatment. Electrical control equipment has been isolated in a building behind the treating room.

Laboratory and research facilities also have been expanded. A number of experiments are under way, including solvent recovery from wood treated with oil-borne preservatives and application of vapor drying to dimensional lumber, principally softwoods, to reduce treating costs and speed up output.

Basically vapor-drying consists of exposing green or partially seasoned wood products within a closed chamber to high-temperature organic vapor, which heats the wood and rapidly vaporizes the water it contains.

The process has reduced seasoning time to a matter of days compared to months and years under orthodox procedures. Twenty-five-ft Southern pine poles have been dried in eight hours.

Vapor drying from a thoroughly green condition to a moisture content of approximately 30% has produced no reduction in strength greater than 5% of the value of untreated controls. In one large-scale test vapor-dried poles were found to have approximately 25% greater bending strength than those processed by steaming.

The vapor-drying process also promises to cut shipping costs by eliminating a considerable proportion of moisture ordinarily left in poles treated by orthodox methods. It is expected to foster more extensive use of species of wood that are subject to early decay during air seasoning.

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Small Circuit Breaker Division Formed by I-T-E

A separate small air circuit breaker division has been formed by I-T-E Circuit Breaker Co, Philadelphia.

The action was taken, the company said, "in view of the increasing importance of the small circuit breaker field, including all molded case circuit breakers and related accessories." Formerly this activity was part of the assembled switchgear and large air circuit breaker division.

Frederick G. Schmidt, who has been assistant to the president, has been appointed manager of the new unit, which consists of the present manufacturing department with associated sales and engineering sections. Schmidt will direct sales, engineering, manufacturing, and associated activities of the division.

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Zinc, Lead Prices Up; Copper Still Unchanged

Zinc and lead prices rose in the week ended May 8—zinc by ½¢ a pound, and lead by ¼¢ a pound. Despite reports of an impending increase in the price of copper, that metal remained unchanged at 19½¢.

Zinc now has moved up 1¾¢ a pound, from 9¾¢, since March 14. The climb is the result of a continued tightening supply situation for all grades. Decreased production because of the low prices formerly prevailing has added to the shortage.

Consumer demand for lead at its new price, 11¼¢, was said to be good, but lead buying currently is less than it has been over the past several weeks.

Forecasts of a higher copper price are based on a large consumer demand, lowest producer stocks in several years, and a further reduction in supply because of the recent three-week shutdown at the Chilean copper mines.

Reports of current prices of metals (see table) will continue to be carried weekly by ELECTRICAL WORLD.

Metals Prices

	May 8, 1950
COPPER, Conn. V., lb	$ .19½
LEAD, N. Y., lb	.11¼
ZINC, prime Western, E. St. Louis, ton	.11½
TIN, Straits quot, N. Y., lb	.76¾
ALUMINUM, base price	.17
NICKEL, base price	.40
STEEL billets, Pitts., ton	53.00
STEEL scrap, No. 1 heavy, Pitts., ton	34.00*

*Based on last confirmed purchase by a steel mill.

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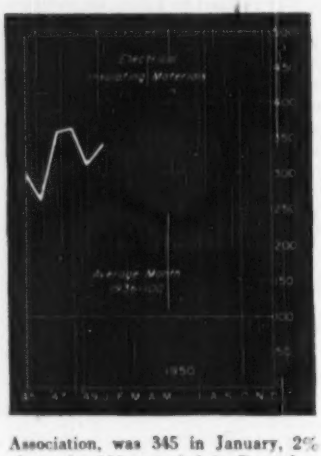
Insulating Materials Sales Up a Little in January

Sales of electrical insulating materials rose slightly in January.

The index of sales billed, compiled by the National Electrical Manufacturers



Association, was 345 in January, 2% above the 338 recorded in December, 1949. January sales were 4% below the corresponding month of 1949, when the index read 359.

MANUFACTURING BRIEFS

A new sales division has been formed in the marketing organization of General Electric Co's Air Conditioning Department to be responsible for sale and servicing of automatic heating equipment, air conditioning equipment, refrigeration machines, commercial refrigeration, and water coolers. H. M. Brundage, manager of the automatic heating division absorbed in the reorganization, has been named manager of the new division.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Arizona-California-Nevada — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Boulder City, Nev., transformers and oil circuit breaker, for Hoover Power Plant, Boulder Canyon Proj. Spec. 3005. L. N. McClellan, ch. engr.

Arkansas—Southwestern Power Admin., Box 1614, Tulsa 1, Okla., 154 kv switching station and connecting transmission lines, near Van Buren. $30,000. Plans deposit $15.

Colorado—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, installing generator for Flatiron Power Plant, Colorado-Big Thompson Proj., in Flatiron Power Plant aprox. 11 mi. southwest of Loveland, and 15 mi. east of Estes Park, Spec. 3013. L. N. McClellan, ch. engr.

Illinois—U. S. Eng., 209 U. S. Courthouse & Customhouse, 1114 Market St., St. Louis 1, Mo., approx. 1550 lin. ft. 34.5 kv. power line and substation incl. installing three 150 kva single phase transformers etc. to serve East Alton Pump Station of Wood River Drainage & Levee Dist., Proj. Item I-E (1), Madison Co., Inv. CIVENG 23-065-50-94.

Ia., Cascade—City Hall, power plant imprvs., incl. Section 1, Diesel generating unit, auxiliaries and piping. Stanley Eng. Co., Hershey Bldg., Muscatine, engr.

Maine—Denny's River Electric Cooperative, Calais, 22 mi. rural distr. lines, Washington Co. $227,000.

Nebraska—Custer Public Power Dist., Broken Bow, rural distr. lines in new territory, Sherman and Lincoln Counties, covering parts of McPherson, Hooker, and Cherry Counties, and taking in all of Thomas, Blaine, Loup and Logan Counties. $500,000. Raymond H. Reed & Co., Columbus, consult. engr.

New York — Niagara Mohawk Power Corp., 15 Broad St., New York, Zone 5, N. Y., 1,400 ft. earth dam, 112 ft. high and 20,000 kw hydro-electric power plant on Sacandaga River, 3 mi. above where it flows into Hudson River, Stewarts Bridge. $4,000,0000. Stone & Webster, Inc., 90 Broad St., New York, Zone 4, consult. engr.

N. Y., Albany—Niagara Mohawk Power Corp., 15 Broad St., New York, Zone 5, 140,000 kw steam-electric station on west shore of Hudson River, 3 mi. south of here. $27,000,000. Stone & Webster, Inc., 90 Broad St., New York, Zone 4, consult. engr.

N. Y., New York—Bd. Transportation, 250 Hudson St., Zone 13, furnishing, installing 11 kv switchgear and associated equip. for the 59 Street Power Plant, Manhattan Boro.

North Carolina — Brunswick Electric Membership Corp., Shallotte, 485 mi. rural distr. lines, serving 1,700 customers, headquarters facilities, sys. imprvs., Brunswick Co. $500,000.

Oklahoma—Oklahoma Gas & Electric Co., 321 N. Harvey St., Oklahoma City, 184 kv transmission line from Mustang Power Plant to El Reno, Canadian Co. $175,000.

Oregon—Bonneville Power Admin., Box 3537, Portland, Zone 8, construct Eugene sub-station adns., Lane Co., Inv. 5104. Plans deposit $25.

Oregon—Bonneville Power Admin., Box 3537, Portland, 39.7 mi. 230 kv. transmission line, Lebanon-Goshen, Inv. 5114, Lane and Linn Counties. Plans deposit $25.

Pa., Polk—General State Auth., 18 and Herr Sts., Harrisburg, reconstructing electrical sys. at Polk State. $505,630. Plans deposit $10. Harry B. Joyce, 616 Commerce Bldg., Erie, engr.

Washington—U. S. Eng., 4735 E. Marginal Way Seattle, Zone 4, constructing Station P/37, parking areas, roads, walks, bridges, bldgs., water and sewer utilities electrical distr. sys., overhead steam distr. sys. and fencing, Serial No. ENG-45-108-50-104.

Washington—Bonneville Power Admin., Box 3537, Portland, 8, Ore., Foster Creek-Columbia River, section of Foster Creek-Snohomish 230 kv transmission line 34 mi., Douglas Co. Plans deposit $25. L. C. Stewart, Box 3537, Portland 8, Ore., engr.

Washington—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, constructing Station P. 60, roads, walks, parking areas, bridge, bldgs., water and sewer utilities, electrical distr. sys., overhead steam distr. sys. and fencing, Serial No. ENG-45-108-50-198.

Washington—Bonneville Power Admin., Box 3537, Portland, 8, Ore., installation outdoor metal-clad 15 kv shunt capacitors and 230 kv series capacitors at Chehalis substation, Lewis Co., Inv. 5109. Plans deposit $25. L. C. Stewart, Box 3537, Portland, 8, Ore., engr.

Wyoming—Bureau Reclamation, Dpt. Interior, P. O. Box 380, 504 Con Roy Bldg., Casper, control and relay board, for Cheyenne Sub-station, Kendrick Proj., Spec. VII-99.

Low Bidders & Contracts Awarded

Arkansas and Missouri—Southwestern Power Admin., Box 1614, Tulsa 1, Okla., 34 mi. 154 kv. power transmission lines from Pocohontas, Ark. to Doniphan, Mo., Contr. No. ISPA-292, from Delta Constr. Co., Clarksdale, Miss. $317,410.

Oregon—Bonneville Power Admin., Box 3537, Portland, Zone 8, 33.7 mi. Reedsport-Coos Bay 115 kv transmission line, Douglas and Coos Counties, Inv. 5055, to M. A. Pithoud, Vancouver, Wash., $195,508. Bids 4/10.

South Dakota—Bon Homme Yankton Electric Assn., Tabor, 590 mi. rural distr. lines, Bon Homme and Yankton Counties, to I. O. Teigen Constr. Co., 1954 University Ave., St. Paul, Minn., $538,490, Bids 4/18.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Conn., Stamford — Stamford-Greenwich Industrial Center, Jesse Hartman, 1068 Main St., plans by Leo. F. Caproni Assocs., 1221 Chapel St., New Haven, 14 brick, concrete factories, Post Rd. $4,750,000.

N. C., Candler—Bd. Comrs., Buncombe Co. T. C. Hoberson., sup. Schools, Candler, voted $5,500,000 bonds, schools, new bldgs. and modernization, county, $4,000,000; city $1,500,000.

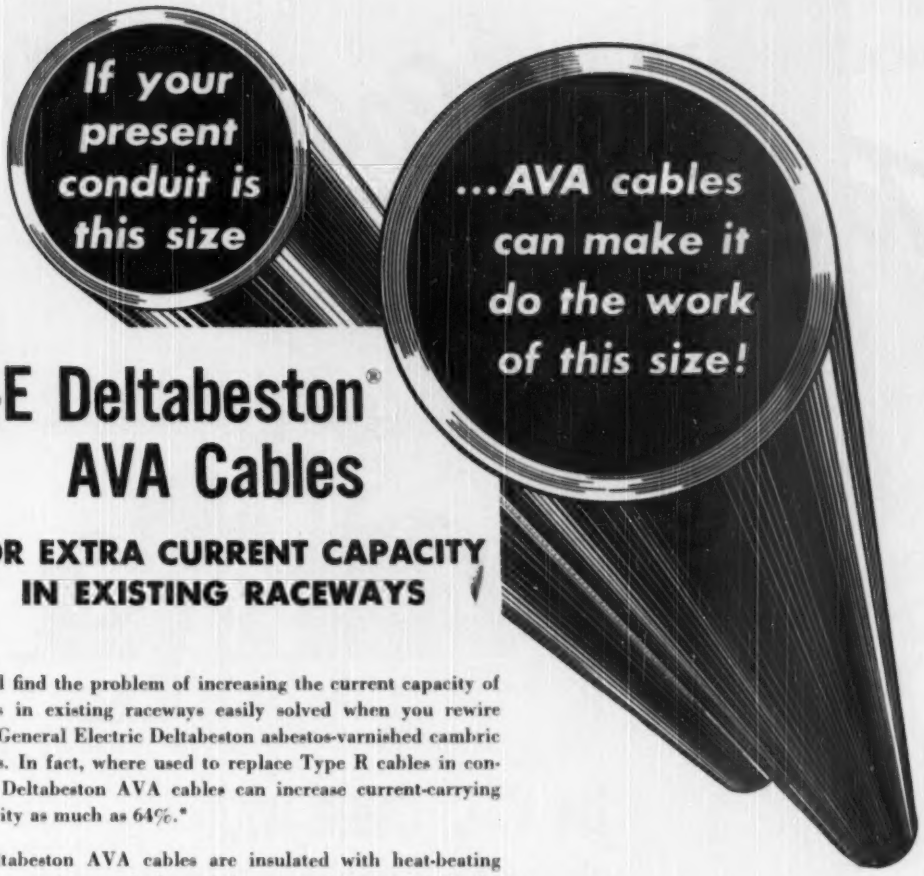
Tex., Houston—Ned Gill, Oil & Gas Bldg., plans by Claude H. Lindsley, 5008 Almeda Rd., 25 story, bsmnt., steel office, penthouse, concrete pier and beam fdn., air-conditioning. $7,500,000.

Va., Roanoke—Lone Star Cement Corp., 342 Madison Ave., New York 17, N. Y., cement plant with annual capacity of 1,500,000 bbls. $6,000,000.

Low Bidders & Contracts Awarded

Calif., San Diego — Roman Catholic Arch-Bishop, c/o contractor, constr. San Diego College for Women, from Trepte Constr. Co., 2001 Kettner Blvd., San Diego, $3,820,335.

Pa., Hollidaysburg — General State Auth., 18 and Herr Sts., Harrisburg, general, contract admission bldg. at Hollidaysburg State Hospital, to McCloskey & Co., 1620 W. Thompson St., Phila. Zone 22, $1,449,000. Bids 4/19, awarded 4/27.



G-E Deltabeston® AVA Cables

FOR EXTRA CURRENT CAPACITY IN EXISTING RACEWAYS

You'll find the problem of increasing the current capacity of cables in existing raceways easily solved when you rewire with General Electric Deltabeston asbestos-varnished cambric cables. In fact, where used to replace Type R cables in conduit, Deltabeston AVA cables can increase current-carrying capacity as much as 64%.*

Deltabeston AVA cables are insulated with heat-beating asbestos and varnished cambric—a combination of insulations that permits cable operation at high temperatures. That's why, at normal ambient temperatures in dry locations (as defined by the National Electrical Code) G-E AVA cables can safely permit far greater current loads than ordinary Types R or RH building wires.

More efficient insulation... more current per unit area than possible with rubber-insulated cables... add up to real savings on your wiring jobs. You realize savings in materials, since there are no raceways to replace... savings in time, because AVA cables are easy to install. For any modernization job, or for new construction, look into the suitability of G-E Deltabeston AVA cables for your power circuits. Additional information can be easily obtained from your local General Electric Construction Materials distributor or district office. Section W6-527, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

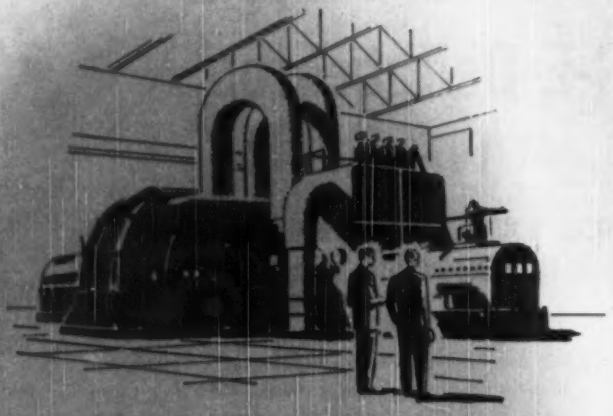
* Calculations show that, in 3-inch conduit, three 500 MCM Type R cables can be replaced by three 600 MCM Type AVA cables with a gain of 64% in current-carrying capacity.

DELTABESTON
wires and cables
built to beat the heat

GENERAL ELECTRIC

Today it's Roebling!

There are more than 60 standard types in Roebling's line of electrical wires and cables. From copper conductors to protective jackets, they are made entirely in Roebling plants. Special techniques and the most modern, precision machines assure quality products, unsurpassed for service and economy.



for V. C. Cable with superior heat resistance

WHEREVER CIRCUITS heat up, you'll get new measures of dependability . . . save both time and money . . . with Roebling Varnished Cambric Cable! It has extreme resistance to heat and is your A-1 specification for leads for generators, transformers, motors and oil switches.

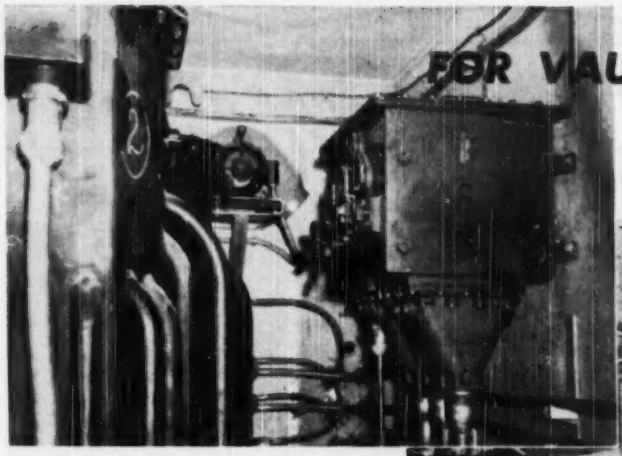
Roebling Varnished Cambric Cable is made in single and multiple conductor types—single, from 2,000,000 C. M. to No. 14 A.W.G.—multiple from 500,000 to No. 14 A.W.G. Both constructions are adapted for use up to 17,000 volts between phases for unshielded multiple conductor . . . up to 21,000 volts between phases for single conductor and shielded cables on ungrounded neutral systems . . . up to 28,000 volts between phases for single conductor and shielded cables on grounded neutral systems.

Write for complete information, or call on your Roebling Distributor for help in choosing the best cables for your requirements. John A. Roebling's Sons Company, Trenton 2, New Jersey.

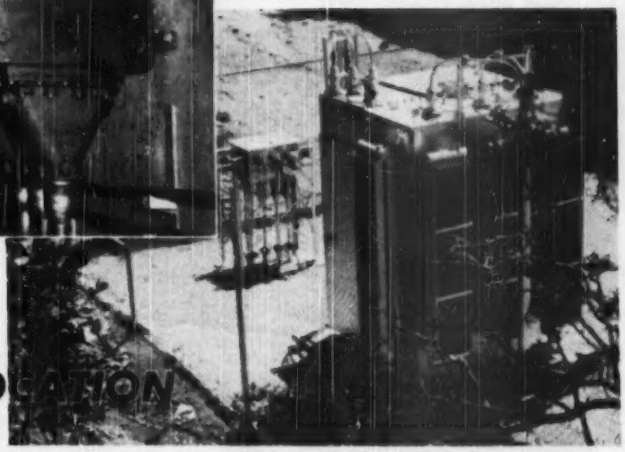
ROEBLING *A CENTURY OF CONFIDENCE*

Atlanta, 934 Avon Ave. ★ *Boston*, 51 Sleeper St. ★ *Chicago*, 5525 W. Roosevelt Road ★ *Cincinnati*, 3253 Fredonia Ave. ★ *Cleveland*, 701 St. Clair Ave., N. E. ★ *Denver*, 4601 Jackson St. ★ *Houston*, 6216 Navigation Blvd. ★ *Los Angeles*, 216 S. Alameda St. ★ *New York*, 19 Rector St. ★ *Philadelphia*, 12 S. Twelfth St. ★ *Portland*, 1032 N. W. 14th Ave. ★ *San Francisco*, 1740 Seventeenth St. ★ *Seattle*, 900 First Ave. S.

JOHN A. ROEBLING'S SONS COMPANY, TRENTON 2, NEW JERSEY



FOR VAULT INSTALLATION



OR OUTDOOR LOCATION

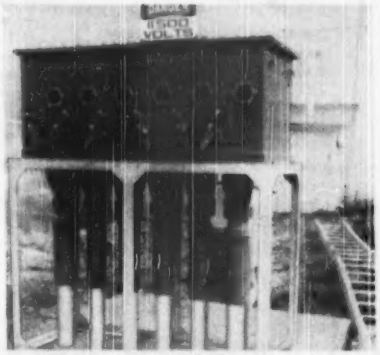
YOU Can Use the G & W Type "RA" MULTIPLE CIRCUIT LOAD BREAK OIL SWITCH

G & W Type "RA" Oil Switches are suitable for installation in any location. One-quarter inch welded steel tanks are completely sealed by "Resistoyl" gaskets on all joints and by "Rotary" oil seals on the operating lever shafts. They are fully air, water, and oil tight for complete protection under any operating conditions.

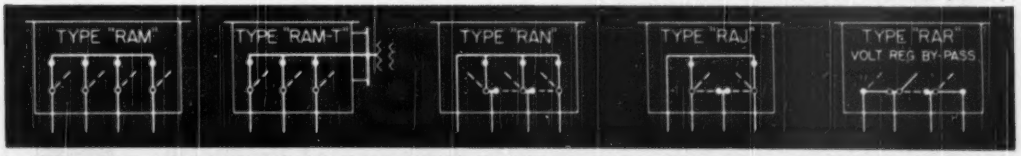
Type "RA" switches are made in many styles of two, three, four or more ways. Each switch is assembled from unit parts to fit individual specifications. Standard ratings are 7500 and 15,000 volts at 400 amperes; higher ratings are available on request.

Five styles of four way "RA" switches are shown below.

Send for Bulletin H49, a manual on "Primary Cable System Flexibility," for more information on Type "RA" switches and their applications to your distribution problems.



Type "RAM" 6 way, 15000 volt oil switch mounted on roof of concrete manhole. External levers allow loop to be sectionalized and four loads to be isolated independently.



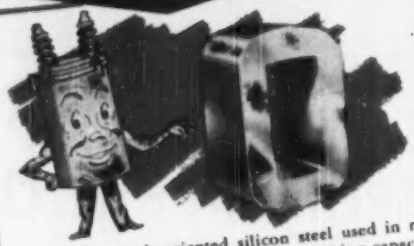
G & W ELECTRIC SPECIALTY COMPANY.
7780 DANTE AVENUE • CHICAGO 19, ILLINOIS, U.S.A.
Representatives in principal cities. In Canada, Powerlite Devices, Ltd., Toronto

I'm built to take it ...and DELIVER!

RAIN OR SHINE... it makes no difference! Load me or *overload* me, I'm built to take it ... from the top of my bushings right down to the bottom of my cold-rolled, oriented silicon steel core. Moloney engineers considered everything that could possibly happen to a line transformer and went to work to design a transformer to do the job better. I'm the answer ... literally a test-tube baby ... *lighter, smaller, better* ... with a "Surge-Tested" Design pedigree!

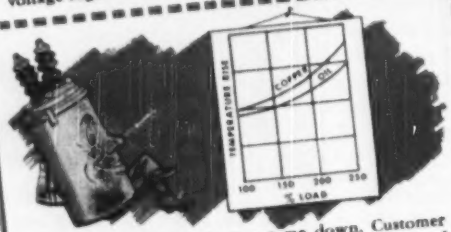
M249-10

Here's WHY

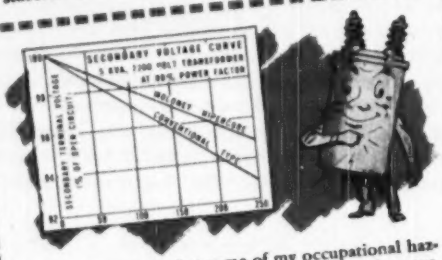


The cold-rolled, oriented silicon steel used in my core has 30% to 35% greater flux carrying capacity than non-oriented steel. In 3 Kva size I weigh but 125 lbs. including oil, and with CSP attachments only 140 lbs. Yet with less weight I have greater short-time overload capacity and provide better voltage regulation.

Because my cores are smaller, so is my coil. This reflects not only in my weight, but in my size. Ordinary transformers of the same Kva up to 30% larger find difficulty in performing tasks I consider routine. Besides, I don't need nearly as much space in the storeroom, on the line truck, or on the pole.



Short-time *overloads* don't get me down. Customer loads, being what they are, anyone with an ounce of temperature gradient knows that heavy peak overloads are inevitable. So I just keep calm and am thankful for my generously proportioned cooling ducts and maintain a lower hottest-spot-over-oil temperature.

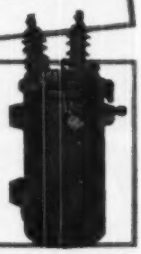


My engineers say that some of my occupational hazards send many young transformers to an early grave. They tell me not to worry though, because my rugged constitution can take these hazards in stride and that I will live a lot longer on the job than many of my contemporaries ... and perform better!

MOLONEY ELECTRIC COMPANY

Sales offices in all principal cities

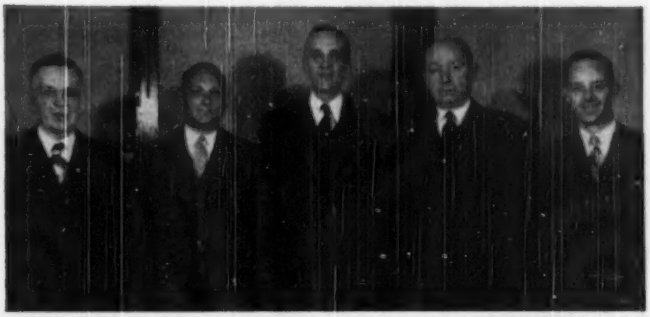
FACTORIES AT ST. LOUIS, MO. AND TORONTO, ONTARIO, CANADA



Illustrated: 5 Kva, 7200 to 120/240 volts Conventional Type HiperCore Transformer.

Send for Bulletin H-305 for complete details of HiperCore Transformers.

NEWS ABOUT PEOPLE



NEW OFFICERS of Simplex Wire & Cable Co are, left to right, Ernest W. Davis, director of engineering; George L. Roberts, vice president in charge of sales; George J. Crowdes, chief engineer; G. A. Grauer, sales manager; and E. J. MacKenzie, advertising manager

Simplex Appoints 5, Names Roberts Sales VP, Davis Engineering Director

Five major appointments have been made by Simplex Wire & Cable Co, Cambridge, Mass.

Ernest W. Davis, chief engineer, is now director of engineering. George L. Roberts, who has been sales manager since 1938, has been named vice president in charge of sales. George J. Crowdes succeeds Davis, and George A. Grauer takes over Roberts' former title. New advertising manager is E. J. MacKenzie.

Davis became Simplex's assistant electrical engineer in 1913. In 1930 he was made electrical engineer and in 1932 chief electrical engineer. He has been chief engineer since 1947. He is a national director of the American Institute of Electrical Engineers.

Roberts joined the firm's manufacturing department in 1915. After World War I he was transferred to the sales department and became assistant sales manager in 1927.

Crowdes has been with Simplex since 1918. He started in the testing department and joined the engineering department in 1925. He became assistant electrical engineer in 1932. Crowdes has been active in AIEE and the National Electrical Manufacturers Association and advised the armed forces on wire and cable matters during World War II.

Before going to Simplex Grauer was sales manager of the mechanical rubber goods and wire department of U. S. Rubber Co. He also has been in sales work with Goodyear Tire & Rubber Co. He joined Simplex in 1935 and was made assistant sales manager in 1938.

MacKenzie succeeds Arthur F. Lewis, who has retired. MacKenzie joined the company in 1936 and was named assistant advertising manager in 1938. Earlier he worked for American Hoist & Derrick Co, St. Paul, Minn., and then went East to serve as assistant advertising manager and later New England merchandising manager of B. F. Sturtevant Co, Hyde Park, Mass.

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Kerr Atkinson, electrical and mechanical engineer with Jackson & Moreland, Boston consultants, has been elected president of the Engineering Societies of New England, Inc. In his early career Atkinson worked for General Electric Co and the Lehigh Valley Coal Co and taught electrical engineering at the University of Missouri. For five years he was in independent consulting practice with R. D. Donaldson. He joined Jackson & Moreland in 1925. He has specialized in steam plant design, utility and industrial power development, and valuation work.

Diamond Power Specialty Promotes 2 Executives

William J. Fitzburgh has been elected executive vice president of Diamond Power Specialty Corp, Lancaster, Ohio, and W. F. Cantieri has been appointed chief engineer.

For the last five years Fitzburgh has been assistant to the president and chief engineer. He joined the Diamond organization in 1929 as a sales engineer in the New York offices. Eight years later he moved to Detroit as chief engineer and held that position for seven years. Before joining Diamond Fitzburgh spent five years as sales engineer and radio specialist for General Electric Co.

In his new post Cantieri will be in charge of patents and of the research, development, drafting, standards, and engineering order departments. He joined Diamond in 1949 as materials application engineer. Before that he was chief engineer of Chapman Chemical Co at Memphis.

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I-T-E and Its Subsidiary Elevate Deans, Heberlein

William Deans, chief engineer of I-T-E Circuit Breaker Co, Philadelphia, Pa., has been elected vice president in charge of engineering. He will be responsible for origination of the company's major engineering policies and coordination of all engineering matters among the company's various divisions and subsidiaries.

Gus E. Heberlein, who has been chief engineer of I-T-E's subsidiary, Railway & Industrial Engineering Co, Greensburg, Pa., has been appointed manager of the switchgear division of the parent company. Heberlein will have charge of inside sales, engineering, manufacturing, and associated services for large air circuit breakers and switchgear.

Deans has served as I-T-E's chief engineer since 1933. He is a fellow of the American Institute of Electrical Engineers and has made many contributions to the development of electrical switchgear and protective and control devices. For three years before World War I he was an instructor in electrical engineering at Cornell Univer-

sity. He served as a member of Thomas A. Edison's research staff during the first World War and was chief engineer of Sundh Electric Co from 1918 to 1933.

Heberlein has been R&IE chief engineer since 1941. Earlier he served as a development engineer in the switchgear division of Westinghouse Electric Corp and as sales manager of the latter's switchgear devices section.

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Duke Power Elects Hill, Reed as Vice Presidents

Thomas F. Hill, supervisor of branches, and Charles S. Reed, rate engineer, have been elected vice presi-

THOMAS F. HILL

dents of Duke Power Co, Charlotte, N. C.

Hill joined the company in 1909. Before his promotion in 1933 to the post of assistant to the president, in charge

CHARLES S. REED

of operations at Winston-Salem, he had been superintendent of the street railway, contract, and meter departments and manager at Anderson.

He served as assistant to the president for 15 years before being transferred to the general office in Charlotte as supervisor of branches in 1948. He has been a member of the board of directors for several years.

Reed joined the company in 1929 as a consultant. He has served it as a rate engineer and a member of the board of directors.

At one time Reed was connected with Durham Public Service Co as engineer and accountant and later as secretary. He also has been a utilities rate consultant and for 15 years was a member of the Cities Service Co organization.

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Tom Turner, general manager of the Westinghouse Electric Corp elevator division at Jersey City, N. J. since 1948, has been elected a vice president. He has been with the company 28 years.

OBITUARY

A. C. Streamer

A. C. Streamer, 64, former vice president of Westinghouse Electric Corp in charge of the East Pittsburgh, Pa., works, died May 4 at his home in Forest Hills, Pa.

Streamer also was a former president of the National Electrical Manufacturers Association. He had been with Westinghouse since 1907 and had been general manager of the East Pittsburgh works from 1939 until his retirement in 1947. He was made a vice president in 1941.

Among titles he had held at East Pittsburgh were assistant manager of sales, manager of diversified products, manager of the transportation division, and manager of the switchgear division. One of his major jobs there was directing the engineering and sales negotiations of Westinghouse locomotive equipment in connection with the electrification extension of the Pennsylvania Railroad lines on the New York-Washington, D. C., and Philadelphia-Harrisburg, Pa., runs.

He directed the plant's defense and war production and helped in the development and design of high power oil circuit breakers for heavy voltage lines. In connection with the latter work, he established a high power test laboratory.

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Harmon F. Fisher, chief engineer at the Sunnyvale, Calif., plant of Westinghouse Electric Corp, died April 21 in Palo Alto, Calif. Fisher, who had been associated with Westinghouse intermittently for 47 years, also had been an assistant professor of engineering at the University of California and research director of the product development department of the Kaiser and Permanente Metals companies. He went to Sunnyvale in 1944 with Joshua Hendy Iron Works, later taken over by Westinghouse.

W. E. Durfey, 75, who retired in 1940 as vice president and assistant treasurer of the San Joaquin Power division of Pacific Gas & Electric Co, died in Fresno, Calif., recently following a heart attack. He joined San Joaquin Power Co in 1903 before it was made a subsidiary of PG&E and became vice president when the merger was effected in 1930. Following consolidation of the organization in 1938 he was also appointed assistant treasurer.

John W. Keeney, 63, superintendent of power for the northeastern division of New England Power Co, died suddenly at Andover, Mass., May 3. After working for Virginia Electric & Power Co he became superintendent of power for the then southern division of New England Electric System at Providence, R. I. In 1935 he was transferred to Lawrence, Mass., with similar responsibilities.

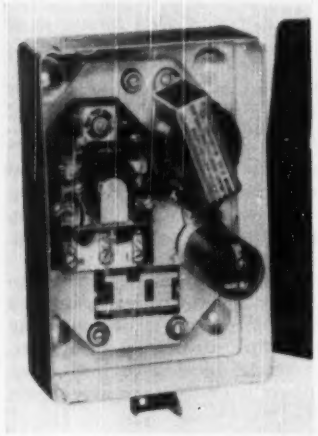
Clair A. Runnals, former district superintendent of Central Maine Power Co, died recently at Dover-Foxcroft, Maine. He retired from active service in 1949 after nearly 50 years in the utility field, starting as a station operator and lineman with the predecessor Dover & Foxcroft Light & Heat Co. After serving as a territorial representative of the Central Maine company, Runnals was appointed district superintendent in 1922.

Guy S. Hyatt, comptroller of the apparatus department of General Electric Co since 1943, died April 30 in his Schenectady, N. Y., home. He was 46. Hyatt joined GE's accounting department in 1923. Later he was auditor of the plastics division in Pittsfield, Mass., and auditor of works accounts and assistant comptroller of the apparatus department.

Henry B. Sawyer, for many years treasurer of public utilities affiliated with the Stone & Webster interests, Boston, died recently in Wellesley, Mass. He retired from Stone & Webster several years ago and for 10 years served as a trustee of the New York, New Haven & Hartford Railroad.

Carl Sumner Dixon, retired general superintendent of General Electric Co's Pittsfield, Mass., works died in Pittsfield April 29 at the age of 66.

NEW EQUIPMENT



Low Voltage Release Relay

A TIME DELAY low voltage release relay has been designed for use with a separate motor starter and pushbotton station to provide automatic motor restarting after a momentary voltage fluctuation or power failure of a few seconds duration. If the power failure is prolonged more than a few seconds, the relay circuit "times out", disconnecting the motor from the line.

Automatic restarting occurs if voltage returns to 85% of normal within the 2 to 4 sec time delay for which the device can be set. One relay can be used with any number of pushbutton stations. They can be used with a suitable motor starter for control of ac motors up to 200 hp.

Square D Co, Industrial Controller Div, Milwaukee 12, Wis.

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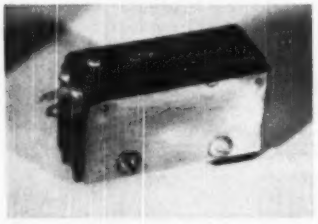

Snap-Action Switches

A THERMALLY responsive unit combined with a miniature snap-action switch forms a switch for protecting motor load, relay, or lamp circuits.

The Therm "U" adapter, which furnishes the protection, has a resistance wire heater which becomes overheated, in case of overload, to heat the thermally sensitive unit. When used with heavy currents, the thermal element itself acts as the heater. They are available in either automatic or manual reset types.

The Therm "U" weighs about 0.3 ounce and can be had in current ratings from 5 to 25 amp, and to 40 amp for special purposes.

Safety Devices Manufacturing Co, 570 Seventh Ave, New York 18, N. Y.

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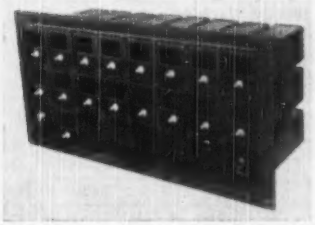

Annunciator

RESETTING facilities and plug-in type operating relay are incorporated in the lamp-type signal unit of the Unitype audible and visual annunciator. The signal unit can be wired for indication of abnormal conditions such as high temperatures, over-heated bearings, high and low tank levels, etc, in a central station.

Future signal positions are covered by a blank escutcheon plate. Additional signal units can be added by removing the cover, inserting and connecting the new section, and completing the annunciator bus with jumpers which are supplied with the section. Signal sections are available for operating voltages of 115 v ac or 90 to 140 v dc. More information is in Bulletin A1-1.

The Superior Appliance Co, 73-39 Central Ave, Glendale, L. I., N. Y.

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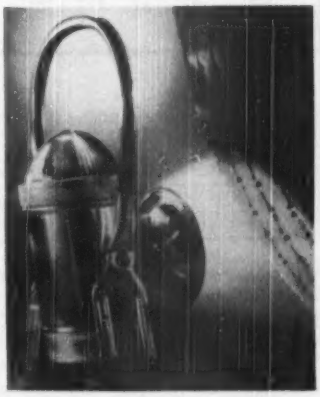
Emergency Lamp

USEFUL as an emergency signal lamp as well as a general utility light, the Ecolite Protector Lite has both a flashing red light and a penetrating white light. The aluminum case can be rotated on its stand in a 360-deg circle to send light in any desired direction. Smooth handle is formed of extruded plastic material.



Lantern is 9 in. high and weighs 2¼ lb, battery included.

Economy Electric Lantern Co, Inc, 810 N. 6th Ave, Sturgeon Bay, Wis.

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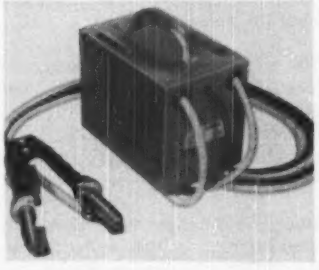


Soldering Tool

SOLDER LUGS up to 450 amp and copper tubing up to 1½ in. diam are reportedly handled by the new Standard Thermo-Grip soldering tool. Touching the work with the tool completes the secondary power circuit, no preheating being necessary. Capacity is 1,000 amp.

Among the attachments available are a "plier" for sweating and unsweating terminals, soldering lugs, etc, and a "fork" attachment with 3-in. electrodes for reaching into restricted places such as switch boxes.

Ideal Industries, Inc, 1021 Park Ave, Sycamore, Ill.

ELECTRICAL BUSINESS OUTLOOK

Construction work is going to cost utilities more as 1950 wears on. Increases have been popping up in prices of construction materials and in wages paid construction labor. It won't be long before these higher costs are reflected in contractors' bids.

You can get a quick idea of what's been happening by a look at the index of construction costs compiled by *Engineering News-Record* (chart). This index reflects changes in costs of labor and a few key materials. It jumped in the first quarter of this year. And, from current price reports, the second quarter figure will be still higher. In the past, a rise like this in the *News-Record* index has always foreshadowed a rise in the total cost of construction jobs.

The complete list of materials for which prices have been boosted is impressive: copper, brass, lead, zinc and galvanized products, paint, glass, lumber, and plywood. Some fabricated items, like wire and brass products, are also up. Record homebuilding and new orders for industrial construction are behind all these increases.

The record number of new homes being completed is straining resources. And there's no sign of a letup. Starts are still running high. On top of this, industrial building is scheduled to step up sharply in coming months. So the uptrend in costs may be only beginning.

Steel prices currently are firm, but shops fabricating steel for construction projects are generally operating on thin margins and may raise prices soon. Steel is scarce, and getting it from distant sources involves extra costs.

Construction wages are headed up too. The record volume of work has brought shortages of labor and, in some areas, premium payments to get workers.

No general shortage of construction materials is in sight. But almost all items will be tight. And spot shortages will occur in some sections this summer. Good quality lumber is becoming scarce in many sections because of the housing boom. But potential output of steel, cement, brick, and tile is probably enough to meet demand. The main effects of higher demand will be slower deliveries, extra handling charges, and the higher costs which these involve for contractors.

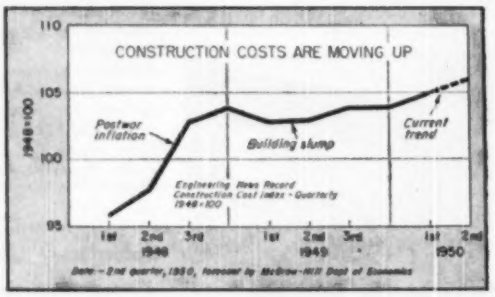
Such increases are not likely to be absorbed, for contracting margins have already narrowed considerably over the past year. Construction bids will be raised, or escalator clauses will be inserted. In fact, the strong demand for their service will encourage many contractors to restore their former profit margins.

Prices of electrical apparatus will not be under as much pressure as construction prices in the immediate future. Equipment manufacturers will have higher costs for materials (EW, May 1, p 30), and probably higher wages. But recent profits have been high. With good volume for the rest of the year, cost increases may be absorbed on many products.

There's still no report of delivery schedules for equipment getting any tighter. Electrical manufacturers have lots of capacity and appear to be caught up with their backlog of work for utilities. However, new orders for equipment have been increasing. And before 1950 is over manufacturers may again be pretty well booked up.

It's possible that orders may increase enough to encourage higher prices eventually. The demand for generating equipment is quite likely to be strengthened by higher than expected peak loads for many utilities in the last part of 1950. Power output so far has not shown its usual seasonal decline for the spring. The seasonal rise in the fall will begin from the highest level on record. If industrial activity continues strong, the peak will be further above 1949 than many observers had forecast. It has been running over 5% and could easily exceed 8% by December.

All in all, it appears that the bottom of the construction cycle is past. The outlook is for strong demand and higher overall costs. And postponements are likely to prove costly.

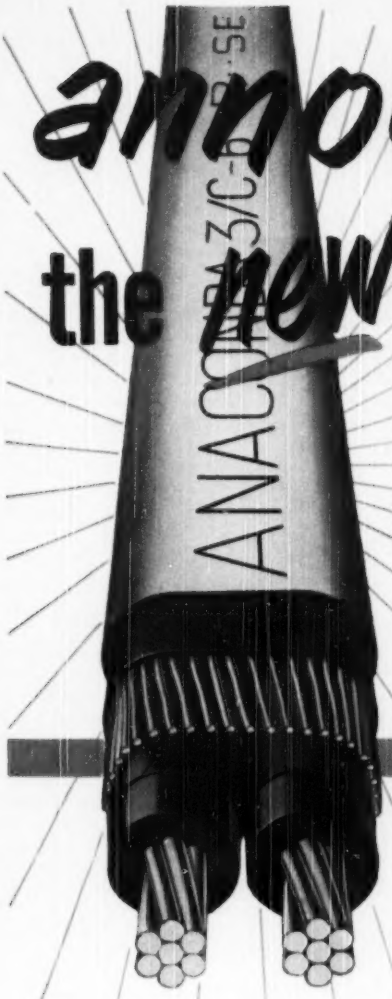


HIGHER CONSTRUCTION COSTS are indicated by the trend of *Engineering News-Record's* index. This index, which reflects some of the most sensitive construction items, usually moves up just ahead of a general rise in construction costs

announcing:

the new SILVALINE

Service Entrance Cable—
Type SE With True URC
WEATHERPROOF Protection



Now, *Anaconda* gives you a completely new Service Entrance Cable that provides greater dependability, longer life, higher resistance to weather, with these 4 features.

1. **TRUE URC SATURANT** and Finish provide durable fibraus covering with excellent weathering properties.

2. **TOUGH NEOPRENE TAPES** cover each individual conductor — increase resistance to heat and weather — in 2 colors, black and red—give the preferred means of colored conductor identification.

3. **GLASS AND COTTON** combination over-all braid covering provides high resistance to deterioration and adds to life of covering.

4. **SILVER-FINISH COATING** provides for clean handling and an attractive surface . . . makes a greatly improved base for house paint—permits use of URC Saturant and Finish without discoloring externally applied paints.

To complete your information on the new Silvaline* URC-Type SE Weatherproof Service Entrance Cable, contact your nearest Anaconda Sales Office or Distributor.

Anaconda Wire & Cable Company,
25 Broadway, New York 4, New York.

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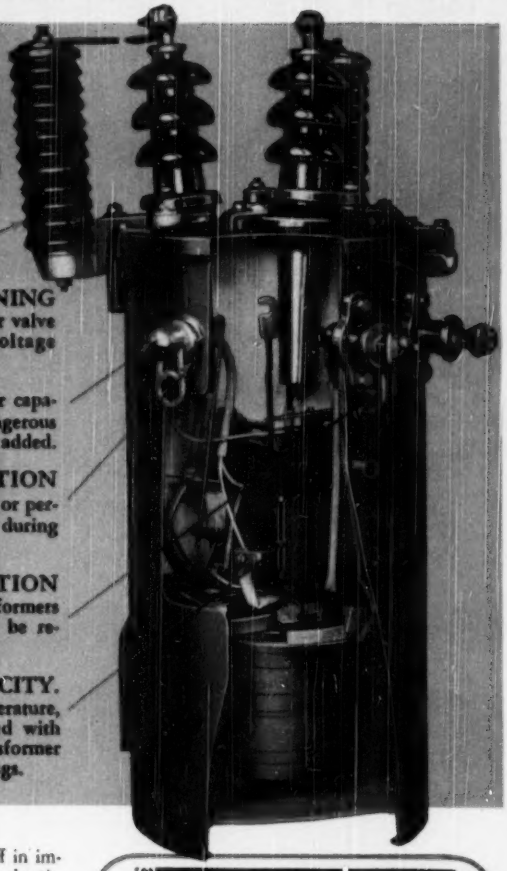
The right cable for the job

ANACONDA®
WIRE AND CABLE

POWER UP and be prepared!

Improve Consumer Service

...with ACP* Transformers



1. **NO INTERRUPTIONS FROM LIGHTNING** — even under severe surges. Arresters in either valve or expulsion type can be specified. High voltage protective links guard against feeder lockouts.
2. **LOADS DON'T OUTGROW** transformer capacity unnoticed. Signal light warns against dangerous overload conditions, and more capacity can be added.
3. **EMERGENCY SERVICE RESTORATION LEVER** provides temporary overload capacity or permits breaker to be reclosed to restore service during an extended overload period.
4. **LOW VOLTAGE SURGE PROTECTION** is provided by low voltage neutral gap on transformers with two high voltage bushings. Can easily be removed and replaced with a ground strap.
5. ***MORE* USEFUL OVERLOAD CAPACITY.** Secondary breaker, operated by either oil temperature, excess current or both, is closely coordinated with transformer thermal characteristics — lets transformer operate right up to actual safe limit of windings.

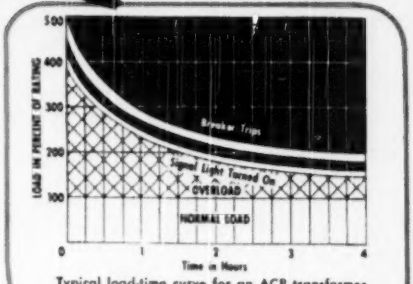
ADDED USEFUL CAPACITY of ACP transformers really pays off in improved consumer service! Full use of overload capacity (see chart), together with complete electrical protection, keeps ACP transformers on the line — keeps power flowing to maintain consumer good will, permits higher load factors.

OTHER PREMIUM ADVANTAGES

And remember too, completely packaged ACP transformers keep installation costs down . . . do not require additional protective devices or added crossarms. Hookstick reset of breaker eliminates time and cost of fuse replacements.

Signal light indicator does away with load checks and associated special equipment.

To top it all, ACP transformers are easy to order. Stocking and service points located throughout the nation. Get details on this sound transformer investment today. Contact your nearby A-C district office or write for bulletin 61B7309A.



Typical load-time curve for an ACP transformer shows how breaker increases useful capacity.

A-3076

ALLIS-CHALMERS, 932A SO. 70 ST.
MILWAUKEE, WIS.

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